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ABSTRACT

This document, which is intended for use by community and junior colleges throughout Mississippi, contains curriculum frameworks for the course sequences in the dental assisting technology program. Presented in the introductory section are a description of the program and suggested course sequence. Section I lists baseline competencies. Section II consists of the curriculum guides for three categories of courses for dental assisting technology: (1) dental assisting technology courses--orientation, materials, dental science I, chairside assisting I, dental radiology I, practice management, dental science II, clinical experience I, dental radiology II, chairside assisting II, dental health education, clinical experience II, and chairside assisting III; (2)related vocational-technical course--fundamentals of microcomputer applications; and (3) related academic courses--English composition I and II, oral communications (principles of speech), anatomy and physiology I and II, general biology I and II, microbiology, general chemistry I, general chemistry laboratory I, general chemistry II, general chemistry laboratory II, principles of chemistry I and II, general psychology I, nutrition, college algebra, survey of physics I, trigonometry, introduction to computer concepts, and music appreciation. Each course outline contains some/all of the following: course name and abbreviation; course classification; course description; prerequisites; and competencies and suggested objectives. Recommended tools and equipment are listed in section III. Appended are lists of related academic topics and workplace skills for the 21st century and student competency profiles for both courses. (YLB)

ED 397 287

Mississippi Curriculum Framework for Dental Assisting Technology

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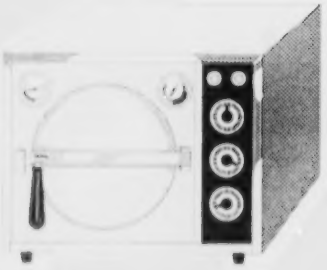

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Postsecondary Vocational and Technical Education
1996

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July 30, 1996

MISSISSIPPI

CURRICULUM FRAMEWORK

FOR

DENTAL ASSISTING TECHNOLOGY PROGRAMS

(Program CIP: 51.0601 - Dental Assistant)

POSTSECONDARY PROGRAMS 1996

July 30, 1996

Direct inquiries to:

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FOREWORD

In order to survive in today's global economy, businesses and industries have had to adopt new practices and procedures. Total quality management, statistical process control, participatory management, and other concepts of high performance work organizations are practices by which successful companies survive. Employers now expect their employees to be able to read, write, and communicate effectively; solve problems and make decisions; and interact with the technologies that are prevalent in today's workplace. Vocational-technical education programs must also adopt these practices in order to provide graduates who can enter and advance in the changing work world.

The curriculum framework in this document reflects these changes in the workplace and a number of other factors that impact on local vocational-technical programs. Federal and state legislation calls for articulation between high school and community college programs, integration of academic and vocational skills, and the development of sequential courses of study that provide students with the optimum educational path for achieving successful employment. National skills standards, developed by industry groups and sponsored by the U. S. Departments of Education and Labor, provide vocational educators with the expectations of employers across the United States. All of these factors are reflected in the framework found in this document.

Each postsecondary program of instruction consists of a program description and a suggested sequence of courses which focus on the development of occupational competencies. Each vocational-technical course in this sequence has been written using a common format which includes the following components:

- Course Name - A common name that will be used by all community/junior colleges in reporting students.

- Course Abbreviation - A common abbreviation that will be used by all community/junior colleges in reporting students.

- Classification - Courses may be classified as:
  - Vocational-technical core - A required vocational-technical course for all students.
  - Vocational-technical elective - An elective vocational-technical course.
  - Related academic course - An academic course which provides academic skills and knowledge directly related to the program area.
  - Academic core - An academic course which is required as part of the requirements for an Associate degree.

- Description - A short narrative which includes the major purpose(s) of the course and the recommended number of hours of lecture and laboratory activities to be conducted each week during a regular semester.

- Prerequisites - A listing of any prerequisite courses that must be taken prior to or on enrollment in the course.

- Competencies and Suggested Objectives - A listing of the competencies (major concepts and performances) and of the suggested student objectives that will enable students to demonstrate mastery of these competencies.

The following guidelines were used in developing the program(s) in this document and should be considered in compiling and revising course syllabi and daily lesson plans at the local level:

- The content of the courses in this document reflects approximately 75 percent of the time allocated to each course. For example, in a four semester hour course consisting of 30 hours lecture and 120 hours of laboratory activities, approximately 22 hours of lecture and 90 hours of lab should be taken by the competencies and suggested objectives identified in the course framework. The remaining 25 percent of each course should be developed at the local district level and may reflect:
  - Additional competencies and objectives within the course related to topics not found in the State framework, including activities related to specific needs of industries in the community college district.
  - Activities which develop a higher level of mastery on the existing competencies and suggested objectives.
  - Activities and instruction related to new technologies and concepts that were not prevalent at the time the current framework was developed/revised.
  - Activities which implement components of the Mississippi Tech Prep initiative, including integration of academic and vocational-technical skills and coursework, school-to-career transition activities, and articulation of secondary and postsecondary vocational-technical programs.
  - Individualized learning activities, including worksite learning activities, to better prepare individuals in the courses for their chosen occupational area.

- Sequencing of the course within a program is left to the discretion of the local district. Naturally, foundation courses related to topics such as safety, tool and equipment usage, and other fundamental skills should be taught first. Other courses related to specific skill areas and related academics, however, may be sequenced to take advantage of seasonal and climatic conditions, resources located outside of the school, and other factors.

- Programs that offer an Associate of Applied Science degree must include a minimum 15 semester credit hour academic core. Specific courses to be taken within this core are to be determined by the local district. Minimum academic core courses are as follows:
  - 3 semester credit hours — Math/Science Elective
  - 3 semester credit hours — Written Communications Elective
  - 3 semester credit hours — Oral Communications Elective
  - 3 semester credit hours — Humanities/Fine Arts Elective
  - 3 semester credit hours — Social/Behavioral Science Elective

  It is recommended that courses in the academic core be spaced out over the entire length of the program, so that students complete some academic and vocational-technical courses each semester. Each community/junior college has the discretion to select the actual courses that are required to meet this academic core requirement.

- In instances where secondary programs are directly related to community and junior college programs, competencies and suggested objectives from the high school programs are listed as Baseline Competencies. These competencies and objectives reflect skills and knowledge that are directly related to the community and junior college vocational-technical program. In adopting the curriculum framework, each community and junior college is asked to give assurances that:
  - students who can demonstrate mastery of the Baseline Competencies do not receive duplicate instruction, and
  - students who cannot demonstrate mastery of this content will be given the opportunity to do so.

- The roles of the Baseline Competencies are to:
  - Assist community/junior college personnel in developing articulation agreements with high schools, and
  - Ensure that all community and junior college courses provide a higher level of instruction than their secondary counterparts

- The Baseline Competencies may be taught as special "Introduction" courses for 3-6 semester hours of institutional credit which will not count toward Associate degree requirements. Community and junior colleges may choose to integrate the Baseline Competencies into ongoing courses in lieu of offering the "Introduction" courses or may offer the competencies through special projects or individualized instruction methods.

- Technical elective courses have been included to allow community colleges and students to customize programs to meet the needs of industries and employers in their area.

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July 30, 1996

PROGRAM DESCRIPTION

DENTAL ASSISTING TECHNOLOGY

The Dental Assisting curriculum is a one-year program of study designed to prepare the student for employment and advancement in the dental assisting field. The curriculum requires a minimum of 46 semester hours of courses with a certificate granted upon completion of the program. CPR-C is a prerequisite for the program. If the student desires, an Associate of Applied Science degree may be obtained by completing additional prescribed courses.

The program includes lecture hours, lab hours, and supervised clinical experiences. In the clinical experiences, the student will assist the dentist at chairside both in private offices, clinics, and at the University of Mississippi School of Dentistry, as applicable.

Upon graduation from the program, the student will automatically receive a radiology permit which is necessary for taking x-rays in a dental office. Also having successfully completed the program, the student is eligible to take the National Dental Certification Exam.

Forty-six (46) semester credit hours from the following list are required in the Dental Assisting curriculum (option of the junior/community college):

Oral Communications Elective
Dental Orientation
Dental Assisting Materials
Dental Science I
Chairside Assisting I
Dental Radiology I
Written Communications Elective
Practice Management
Dental Health Education
Dental Science II
Chairside Assisting II
Clinical Experience I
Dental Radiology II
Social/Behavioral Science Elective
Chairside Assisting III
Clinical Experience II

DENTAL ASSISTING TECHNOLOGY

SUGGESTED COURSE SEQUENCE I (to begin in Fall Semester)*

Baseline Competencies for Dental Assisting Technology**

FIRST YEAR (CERTIFICATE)

3 sch	Oral Communications Elective	3 sch	Dental Science II (DAT 1323)
1 sch	Dental Orientation (DAT 1111)	3 sch	Chairside Assisting II (DAT 1423)
4 sch	Dental Assisting Materials (DAT 1214)	2 sch	Dental Radiology II (DAT 1522)
3 sch	Dental Science I (DAT 1313)	2 sch	Dental Health Education (DAT 1612)
5 sch	Chairside Assisting I (DAT 1415)	4 sch	Practice Management (DAT 1714)
3 sch	Dental Radiology I (DAT 1513)	5 sch	Clinical Experience I (DAT 1815)
19 sch		19 sch	

SUMMER TERM

3 sch	Written Communication Elective
2 sch	Clinical Experience II (DAT 1822)
3 sch	Chairside Assisting III (DAT 1433)
8 sch	

SECOND YEAR (TECHNICAL)

After completion of the 12-month course of study a student will receive a certificate. If a student wishes to receive the AAS degree, the remainder of the minimum academic courses may be taken, plus additional electives. The second year should include:

3 sch	Math/Natural Science Elective
3 sch	Social/Behavioral Science Elective
3 sch	Humanities/Fine Arts Elective
3 sch	Fundamentals of Microcomputer Applications (CPT 1113)
8 sch	Approved Electives*
20 hours	

12

* Students who lack entry level skills in math, English, science, etc., will be provided related studies.

** Baseline competencies are taken from the high school Allied Health program. Students who can document mastery of these competencies should not receive duplicate instruction. Students who cannot demonstrate mastery will be required to do so.

* APPROVED ELECTIVES LIST

English Composition I (ENG 1113)
English Composition II (ENG 1123)
Oral Communications (Principles of Speech) (SPT 1113)
Anatomy and Physiology I (BIO 1514)
Anatomy and Physiology II (BIO 1524)
General Biology I (BIO 1134)
General Biology II (BIO 1144)
Microbiology (BIO 2924)
General Chemistry I (CHE 1213)
General Chemistry Laboratory I (CHE 1211)
General Chemistry II (CHE 1223)
General Chemistry Laboratory II (CHE 1221)
Principles of Chemistry I (CHE 1314)
Principles of Chemistry II (CHE 1324)
General Psychology I (PSY 1513)
General Sociology I (SOC 2113)
Nutrition (HEC 1253)
College Algebra (MAT 1313)
Trigonometry (MAT 1323)
Survey of Physics I (PHY 1214 or 2414)
Introduction to Computer Concepts (CSC 1113)
Fundamentals of Microcomputer Applications (CPT 1113)
Philosophy
History
Foreign Language
Art
Music Appreciation

July 30, 1996

DENTAL ASSISTING TECHNOLOGY

SUGGESTED COURSE SEQUENCE II (to begin in Spring Semester)*

Baseline Competencies for Dental Assisting**

FIRST YEAR (CERTIFICATE)

SPRING TERM

3 sch	Oral Communications Elective
1 sch	Dental Orientation (DAT 1111)
4 sch	Dental Assisting Materials (DAT 1214)
3 sch	Dental Science I (DAT 1313)
5 sch	Chairside Assisting I (DAT 1415)
3 sch	Dental Radiology I (DAT 1513)
19 sch	

SUMMER TERM

3 sch	Written Communication Elective
2 sch	Clinical Experience II (DAT 1822)
2 sch	Dental Radiology II (DAT 1522)
3 sch	Chairside Assisting II (DAT 1423)
10 sch	

FALL TERM

3 sch	Dental Science II (DAT 1323)
3 sch	Chairside Assisting III (DAT 1433)
2 sch	Dental Health Education (DAT 1612)
4 sch	Practice Management (DAT 1714)
5 sch	Clinical Experience I (DAT 1815)
17 sch	

SECOND YEAR (TECHNICAL)

After completion of the 12-month course of study a student will receive a certificate. If a student wishes to receive the AAS degree, the remainder of the minimum academic courses may be taken, plus additional electives. The second year should include:

3 sch	Math/Natural Science Elective
3 sch	Social/Behavioral Science Elective
3 sch	Humanities/Fine Arts Elective
3 sch	Fundamentals of Microcomputer Applications (CPT 1113)
8 sch	Approved Electives[1]
20 hours	

[*] Students who lack entry level skills in math, English, science, etc., will be provided related studies.

[**] Baseline competencies are taken from the high school Allied Health program. Students who can document mastery of these competencies should not receive duplicate instruction. Students who cannot demonstrate mastery will be required to do so.

[1] APPROVED ELECTIVES LIST

English Composition I (ENG 1113)
English Composition II (ENG 1123)
Oral Communications (Principles of Speech) (SPT 1113)
Anatomy and Physiology I (BIO 1514)
Anatomy and Physiology II (BIO 1524)
General Biology I (BIO 1134)
General Biology II (BIO 1144)
Microbiology (BIO 2924)
General Chemistry I (CHE 1213)
General Chemistry Laboratory I (CHE 1211)
General Chemistry II (CHE 1223)
General Chemistry Laboratory II (CHE 1221)
Principles of Chemistry I (CHE 1314)
Principles of Chemistry II (CHE 1324)
General Psychology I (PSY 1513)
General Sociology I (SOC 2113)
Nutrition (HEC 1253)
College Algebra (MAT 1313)

Trigonometry (MAT 1323)
Survey of Physics I (PHY 1214 or 2414)
Introduction to Computer Concepts (CSC 1113)
Fundamentals of Microcomputer Applications (CPT 1113)
Philosophy
History
Foreign Language
Art
Music Appreciation

SECTION I:

BASELINE COMPETENCIES

BASELINE COMPETENCIES FOR DENTAL ASSISTING TECHNOLOGY

The following competencies and suggested objectives are taken from the publication *Mississippi Curriculum Framework for Allied Health.* These competencies and objectives represent the baseline which was used to develop the community/junior college Dental Assisting Technology courses. Students enrolled in postsecondary courses should either (1) have documented mastery of these competencies, or (2) be provided with these competencies before studying the advanced competencies in the Dental Assisting Technology program.

Baseline competencies may be integrated into existing courses in the curriculum or taught as special "Introduction" courses. The "Introduction" courses may be taught for up to six semester hours of institutional credit and may be divided into two courses. If the Baseline Competencies are to be taught as "Introduction" courses, each course should be at least 3 credit hours. The following course number(s) and description should be used:

Course Name(s): Introduction to Dental Assisting Technology, Introduction to Dental Assisting Technology I, or Introduction to Dental Assisting Technology II

Course Abbreviation(s): DAT 100(3-6), DAT 1013, DAT 1023

Classification: Vocational-Technical Core

Description: These courses contain the baseline competencies and suggested objectives from the high school curriculum which directly relate to the community college program. The courses are designed for students entering the community college who have had no previous training or documented experience in the field. (3-6 semester hours based upon existing skills for each student. May be divided into 2 courses for a maximum total of 6 hours of institutional credit.)

Competencies and Suggested Objectives:

1. Review material related to course and professional organizations.
   a. Identify student and course expectations.
   b. Identify allied health professional student organizations.
   Related Academic Topics (See Appendix A): C1, C6
   Workplace Skills (See Appendix B): WP2
2. Apply communications in health care.
   a. Identify the three main factors required for the communication process.
   b. Utilize effective communication skills.
   Related Academic Topics (See Appendix A): C1, C6
   Workplace Skills (See Appendix B): WP2, WP3

3. Develop individual career awareness in the health care industry.
   a. Describe careers in the dental field.
   Related Academic Topics (See Appendix A): C1, C6
   Workplace Skills (See Appendix B): WP2
4. Explain professional ethics and legal responsibility.
   a. Explain professional ethics and legal responsibility including negligence, malpractice, and health occupation code of conduct.
   b. Define confidentiality.
   c. Identify and explain the rules of ethics.
   Related Academic Topics (See Appendix A): C1, C4, C6
   Workplace Skills (See Appendix B): WP2, WP3
5. Utilize universal precautions.
   a. Explain importance of universal precautions in life practices and health care.
   b. Explain the state and federal government's role in universal precautions.
   c. Relate universal precautions to the transmission of infectious diseases including HIV, AIDS, HBV, and TB.
   d. Demonstrate hand-washing technique.
   e. Demonstrate donning and removing clean gloves.
   Related Academic Topics (See Appendix A): C1, C4, C6, S8
   Workplace Skills (See Appendix B): WP2
6. Recognize safety procedures and policies.
   a. Describe basic safety procedures.
   b. Describe accident prevention methods and disaster plans.
   c. Follow facility policies.
   Related Academic Topics (See Appendix A): C1, C4, C6, S8
   Workplace Skills (See Appendix B): WP2
7. Perform basic safety procedures.
   a. Assist with basic emergency procedures to include falls, seizures, fainting.
   b. Attain Class C certification in cardiopulmonary resuscitation.
   c. Demonstrate procedures of first aid for sudden illness and accidents.
   Related Academic Topics (See Appendix A): C1, C4, C6, S8
   Workplace Skills (See Appendix B): WP2, WP6
8. Recognize and use medical terminology.
   a. Demonstrate the use of medical references to spell medical terms correctly.
   b. Spell designated medical terms correctly.
   c. Define and divide medical terms into root words, prefixes, and suffixes.
   d. Interpret the common medical abbreviations and symbols including meanings and uses.
   e. Demonstrate the use of medical terms and abbreviations in reading, speaking, interpreting, and writing simulated medical records.
   Related Academic Topics (See Appendix A): C1, C4, C5, C6, S1, S8
   Workplace Skills (See Appendix B): WP2, WP4

9. Recognize the structure and functions of each organ system and apply related basic skills.
   a. Interpret the basic organization of the body.
   b. Interpret the basic structures and functions of the integumentary system.
   c. Interpret the basic structures and functions of the musculoskeletal system.
   d. Interpret the basic structures and functions of the circulatory system.
   e. Interpret the basic structures and functions of the respiratory system.
   f. Interpret the basic structures and functions of the digestive system.
      i. Identify the basic food groups with examples of each.
      ii. Describe types of therapeutic diets.
   g. Interpret the basic structures and functions of the nervous system.

   Related Academic Topics (See Appendix A): C1, C2, C5, C6
   Workplace Skills (Appendix B): WP2, WP3, WP4
10. Assess dental health careers by utilizing medical terminology and basic skills in exploring specific dental careers.
   a. Interpret basic dental abbreviations and symbols by charting accurately.
   b. Interpret and spell dental terminology including breakdown by prefixes, suffixes, and root words.
   c. Demonstrate brushing and flossing teeth according to currently approved practice.
   d. Differentiate between the dentition of the child and adult including primary and secondary dentition.
   e. Compare the location, structure, and function of three types of teeth including incisors, molars, and cuspids.
   f. Demonstrate dental charting using the Universal Method and basic dental charting guidelines.
   g. Recognize methods of prevention and detection of caries and peridontal disease according to established dental guidelines.
   h. Discuss chairside assistance and treatment room maintenance within basic chairside techniques.
   i. Set up a basic dental tray for initial patient examination.
   j. Interpret the correct usage for three types of dental instruments found within dentistry.
   k. Cite three types of restorative materials found in dental laboratories.

   Related Academic Topics (See Appendix A): C1, C2, C4, C6, M4, S1, S8
   Workplace Skills (See Appendix B): WP2, WP3

SECTION II:

CURRICULUM GUIDE

FOR

DENTAL ASSISTING TECHNOLOGY

July 30, 1996

DENTAL ASSISTING TECHNOLOGY COURSES

Course Name: Dental Orientation

Course Abbreviation: DAT 1111

Classification: Vocational-Technical Core

Description: The development, function, status, and organization of the dental profession; and the professional, legal, and ethical responsibilities of the dental assistant. Terminology emphasizing prefixes, suffixes, roots, abbreviations, spelling, and definitions of medical and dental terms. (1 sch: 1 hr. lecture)

Prerequisites: None

Competencies and Suggested Objectives:

1. Discuss the development, function, status, and organization of the dental profession.
   a. Identify the major historical events in dentistry and allied health occupations.
   b. Discuss the increased need and demand for dental care.
   c. Discuss the manner in which the dental needs of the population are being met.
   d. Explain the objectives and organizational purposes of the dental profession.
   e. Define the medical and dental specialties.
   f. Define the dental specialties and describe the role of the dental assistant in each area.
   g. Demonstrate knowledge of the function, organizational structure, and services of the professional organization for dentists.
   h. List the allied professional programs and agencies related to the dental profession.
   i. Identify the function, organizational structure, and services of the professional organizations for dental assistants.
   j. Discuss the function and organizational structure of the professional organizations for dental hygienists.
   k. Discuss the organizations which are available to dental lab technicians.
   l. Discuss the roles of the dental assistant as a member of the dental team.
   m. Identify the roles of other members of the dental team.

   Related Academic Topics (See Appendix A): C1, C2, C4, C6
   Workplace Skills (See Appendix B): WP2
2. Discuss the educational requirements of the members of the dental profession.
   a. State the educational requirements for the dental assistant.
   b. State the educational requirements for the dentist.
   c. List the educational requirements for the dental hygienist.
   d. State the educational requirements for the dental lab technician.

e. Identify the requirements which a candidate must meet in order to qualify for the certification exam and explain the requirements necessary to retain current certification.

Related Academic Topics (See Appendix A): C1, C2, C4, C6
Workplace Skills (See Appendix B): WP2

3. Explain the professional, legal, and ethical responsibilities of the dental assistant.
   a. Demonstrate knowledge of the rules and regulations of the dental assisting program.
   b. Discuss the importance of good health and grooming while working in a health team field.
   c. Define jurisprudence and code of ethics, and discuss ethics.
   d. Explain the provisions in the state dental practice act, especially those pertaining to the dental auxiliary.

   Related Academic Topics (See Appendix A): C1, C3, C4, C6
   Workplace Skills (See Appendix B): WP2, WP6

4. Recognize and discuss word components, terms, and abbreviations related to the dental profession.
   a. Utilize correct dental/medical terminology as related to the dental practice.
   b. Develop and use a professional vocabulary in speaking and writing.

   Related Academic Topics (See Appendix A): C1, C2, C4, C6
   Workplace Skills (See Appendix B): WP2

5. Identify various employment opportunities in the field of dental assisting.
   a. List the employment opportunities available to a qualified dental assistant.
   b. Discuss the manner in which the dental assistant locates employment opportunities.

   Related Academic Topics (See Appendix A): C1, C3, C4, C6
   Workplace Skills (See Appendix B): WP2

Course Name: Dental Assisting Materials

Course Abbreviation: DAT 1214

Classification: Vocational-Technical Core

Description: Dental safety precautions will be emphasized. Includes a comprehensive study of the physical and chemical properties of dental materials. Lab sessions include measuring, manipulating, and preparing dental materials for use in the dental operatory and dental laboratory. (4 sch: 2 hr. lecture, 4 hr. lab)

Corequisites: Dental Science I (DAT 1313) and Dental Orientation (DAT 1111)

Competencies and Suggested Objectives:

1. Relate safety requirements for handling dental materials and equipment.
   a. Comply with safety regulations at all times.
   b. Discuss disposal of hazardous wastes, including mercury, according to the local, state, and federal regulations.
   c. State the function of mercury; discuss proper handling of mercury in the dental office.
   d. Discuss proper use of an special light for light activated composite resin.
   e. Describe the disinfection of an impression.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6
   Workplace Skills (See Appendix B): WP2
2. Identify various dental materials.
   a. Survey the types of dental restorations.
   b. Classify the restorative materials as permanent, temporary, or intermediary bases.
   c. Cite the physical and biological considerations for selecting dental materials.
   d. Describe physical, electrical, and mechanical properties of dental materials and discuss in definable terms.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6
   Workplace Skills (See Appendix B): WP2
3. Describe characteristics of gypsum products.
   a. Define model, cast, and die.
   b. Identify the classes of gypsum products.
   c. Discuss the physical and chemical properties of gypsum products.
   d. Discuss manipulation of gypsum products.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6
   Workplace Skills (See Appendix B): WP2

4. Describe the uses and properties of preventive dental materials.
   a. Discuss the preventive dental materials:
      i. Fluoride
      ii. Pit and fissure sealants
      iii. Mouth protectors
   b. List the armamentarium and describe the finishing and polishing techniques for preventive dental materials.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6
   Workplace Skills (See Appendix B): WP2
5. Explain characteristics of dental cements and liners.
   a. Define cements and summarize their uses, i.e., cementation, base, temporary restorations, liners, and varnish.
   b. List the cements suitable for cementation and list the composition, properties, and manipulation of each:
      i. Zinc phosphate
      ii. Zinc oxide eugenol
      iii. Zinc polycarboxylate
      iv. Glass ionomer
   c. List the cements suitable for bases and temporary fillings and discuss the properties and manipulation of each:
      i. Zinc oxide eugenol
      ii. Calcium hydroxide
   d. Define cavity liner and varnish.
   e. Discuss the cements used for special applications.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6
   Workplace Skills (See Appendix B): WP2
6. Discuss the uses and properties of dental waxes.
   a. Explain the properties and laboratory use of inlay wax.
   b. Describe other dental waxes and their uses.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6
   Workplace Skills (See Appendix B): WP2
7. Discuss the uses and properties of plastics in dentistry.
   a. Have an overview of plastics used in prosthetics.
   b. List the types of direct esthetic restorative material.
   c. State the composition, setting reaction, properties, and manipulation of unfilled resin.
   d. List the composition and reactions of composite resins.
   e. Discuss the properties and clinical qualities of composite resins.
   f. Describe the manipulation of each type of composite resin.
   g. Review the ionomers as restorative materials.
   h. List the armamentarium and describe the finishing and polishing techniques for plastics dental materials.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6
   Workplace Skills (See Appendix B): WP2

8. Describe the uses and properties of precious and non-precious metals.
   a. Explain the properties of pure gold and list the types of pure gold.
   b. List the constituents of a gold alloy and discuss the effect of each constituent.
   c. Classify and discuss each of the four types of gold alloys.
   d. Explain the composition, uses, and general properties of non-precious alloys.
   e. List the armamentarium and describe the finishing and polishing techniques for precious and non-precious metal dental materials used.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6
   Workplace Skills (See Appendix B): WP2
9. Discuss the properties of amalgam.
   a. Define amalgam and explain the clinical uses of amalgam.
   b. State the function of mercury.
   c. List the composition of amalgam alloys and describe its manufacture.
   d. Examine the properties of amalgam:
      i. Dimensional change
      ii. Strength
      iii. Creep
      iv. Tarnish and corrosion
   e. Discuss the correct manipulation of amalgam:
      i. Selection
      ii. Proportioning
      iii. Mixing
      iv. Condensation
      v. Finishing
   f. List the armamentarium and describe the finishing and polishing techniques for amalgam dental materials.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6
   Workplace Skills (See Appendix B): WP2
10. Describe the uses and properties of impression materials.
   a. List the desirable properties of impression materials; classify these as rigid or flexible.
   b. State the composition, properties, and use of the following impression materials:
      i. Impression compound
      ii. ZOE impression paste
      iii. Agar hydrocolloid
      iv. Alginate
      v. Polysulfide rubber
      vi. Silicone rubber
      vii. Polyether rubber

c. Describe the steps and supplies necessary to manipulate and take an impression with the following materials:
   i. Impression compound
   ii. ZOE impression paste
   iii. Agar hydrocolloid
   iv. Alginate
   v. Rubber materials
      (1) Polysulfide
      (2) Silicone/polysiloxane
      (3) Polyether

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6
Workplace Skills (See Appendix B): WP2

11. Demonstrate manipulation of gypsum products.
   a. Use both the metric and apothecary methods of measuring dental materials.
   b. Weigh gypsum products and measure water for pouring a study model.
   c. Locate and assemble armamentarium for mixing a gypsum product.
   d. Mix a gypsum product for a cast, a die, and a model.

Related Academic Topics (See Appendix A): C3, C5, M4, S5, S8
Workplace Skills (See Appendix B): WP2, WP6

12. Demonstrate manipulation of dental cements and liners.
   a. Select armamentarium necessary to prepare a mix of zinc phosphate.
   b. Prepare a mix of zinc phosphate cement for (1) a luting agent and (2) cement base.
   c. Select armamentarium necessary to prepare a mix of zinc oxide eugenol (conventional type) and reinforced.
   d. Prepare a mix of conventional zinc oxide eugenol to be used for (1) a base and (2) treatment filling.
   e. Prepare a mix of reinforced zinc oxide eugenol for (1) luting, (2) base, and (3) treatment filling.
   f. Select armamentarium necessary to prepare a mix of polycarboxylate cement.
   g. Prepare a mix of polycarboxylate cement for luting.
   h. Select armamentarium for mixing glass ionomer cement.
   i. Prepare a mix of glass ionomer cement for luting.
   j. Select equipment and materials necessary to prepare a mix of calcium hydroxide.
   k. Prepare a calcium hydroxide liner.
   l. Select and set up the armamentarium for the placement of a cavity varnish or base.

Related Academic Topics (See Appendix A): C3, C5, M4, S5, S8
Workplace Skills (See Appendix B): WP2, WP6

13. Demonstrate manipulation of various dental waxes.
    a. Manipulate various types of processing waxes by:
        i. Beading an impression tray.
        ii. Boxing an impression prior to pouring.
        iii. Taking a wax bite of a classmate.

    Related Academic Topics (See Appendix A): C3, C5, M4, S5, S8
    Workplace Skills (See Appendix B): WP2, WP6
14. Demonstrate manipulation of dental plastics.
    a. Mix unfilled resin for repair; make a custom tray and a temporary crown.
    b. Select and prepare the equipment and materials required to mix composite resin with 100% accuracy.
    c. Produce a mix of composite resin.
    d. Prepare materials to be used with composite resin, glazing agent, acid etching agents, and lights.
    e. Prepare a mix of autopolymerizing composite resin.
    f. Prepare a mix of light activated composite resin.
    g. Demonstrate proper use of a special light for light activated composite resin.

    Related Academic Topics (See Appendix A): C3, C5, M4, S5, S8
    Workplace Skills (See Appendix B): WP2, WP6
15. Demonstrate manipulation of dental amalgam.
    a. Select and prepare the equipment and materials required to manipulate amalgam mechanically with 100% accuracy.
    b. Produce a mix of amalgam (pre-weighed and conventional).

    Related Academic Topics (See Appendix A): C3, C5, M4, S5, S8
    Workplace Skills (See Appendix B): WP2, WP6
16. Demonstrate manipulation of impression materials.
    a. Mix ZOE paste to be used for an edentulous patient.
    b. Prepare an impression of edentulous arch on a typodont.
    c. Pour a model using the edentulous impression.
    d. Select the necessary equipment and materials to prepare irreversible hydrocolloid (alginate).
    e. Mix alginate impression material.
    f. Take an impression of a typodont using alginate material.
    g. Construct two sets of study models using gypsum products.
    h. Trim two sets of study models.
    i. Select and prepare equipment and materials necessary to prepare reversible hydrocolloid impression material.
    j. Prepare reversible hydrocolloid impression material.
    k. Take an impression of a typodont using reversible hydrocolloid impression material.
    l. Select the necessary equipment and material for the preparation of rubber impression materials.

m. Prepare a mix of rubber impression material (polysiloxane, silicone, polysulfide, and polyether).
n. Load the syringe with light-bodied rubber impression material.
o. Take an impression of a typodont using rubber impression material.

Related Academic Topics (See Appendix A): C3, C5, M4, S5, S8
Workplace Skills (See Appendix B): WP2, WP6

Course Name: Dental Science I

Course Abbreviation: DAT 1313

Classification: Vocational-Technical Core

Description: Physiology, anatomy, and morphology as related to the oral cavity. Content organized to include a study of the body systems, the anatomy of the head and neck, and the form of each of the 32 teeth. (3 sch: 3 hr. lecture)

Prerequisites: None

Competencies and Suggested Objectives:

1. Describe primary and permanent dentition.
   a. Recite the names of the individual teeth (primary and secondary) and identify their proper position.
   b. Indicate how position relates to dental numbering systems.
   c. Name and define the four groups of teeth and discuss the general functions of each group.
   d. Define the five surfaces of both anterior and posterior teeth.
   e. Identify point and line angles, contact areas, and embrasure areas of the teeth.
   f. Identify the structures of the crown surfaces of the teeth.
   g. Name the major parts of the teeth and locate parts on a teaching model and a transparency.
   h. Describe the differentiating characteristics of the maxillary teeth.
   i. Describe the differentiating characteristics of the mandibular teeth.
   j. Discuss occlusion and maintenance of tooth position.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, S8
   Workplace Skills (See Appendix B): WP2, WP6
2. Illustrate the anatomy of a tooth.
   a. Demonstrate how to use a boley gauge and demonstrate its use during class sessions.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, M4, M5, S1
   Workplace Skills (See Appendix B): WP2, WP6
3. Describe the anatomy and physiology of the head and neck.
   a. Locate and identify the bones that are anatomical landmarks of the cranium.
   b. Locate and identify the bones that form the skeleton of the face.
   c. Locate and identify the major anatomical landmarks of the mandible.
   d. Locate and identify the temporomandibular joint and discuss its function.
   e. Locate and identify the muscles of mastication and indicate the function of each.

f. Describe, locate, and identify the paranasal sinuses.
g. Locate and identify the major anatomical landmarks of the hard palate.
h. Locate and identify the anatomical landmarks of the mouth.
i. Describe, locate, and identify the salivary glands and ducts.
j. Identify the trigeminal nerve and trace the nerve supply to the individual teeth.
k. Locate and identify the arteries and veins that supply the head and neck region. Explain the circular blood supply and return.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, S1
Workplace Skills (See Appendix B): WP2, WP6

4. Describe the relationships of body systems to the dental patient.
   a. Relate the importance of basic sciences to dental assisting.
   b. Define anatomy and various branches.
   c. Define terms that are used to describe the position of body parts.
   d. Recite the general composition of the body; identify the four body cavities and recite the major organs included in each cavity.
   e. Name the organs composing the skeletal system and relate the physiology of the system.
   f. Name the organs composing the muscular system and relate the physiology of the system.
   g. Name the organs composing the nervous system and relate the physiology of the system.
   h. Name the organs composing the circulatory system and relate the physiology of the system.
   i. Name the organs composing the respiratory system and relate the physiology of each.
   j. Name the organs composing the digestive system and relate the physiology of each.
   k. Name the organs composing the urinary system and relate the physiology of the system.
   l. Name the organs composing the endocrine system and relate the physiology of the system.
   m. Name the organs composing the reproductive system and relate the physiology of each.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, S1
Workplace Skills (See Appendix B): WP2, WP6

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Course Name: Chairside Assisting I

Course Abbreviation: DAT 1415

Classification: Vocational-Technical Core

Description: Comprehensive study of information relating to assisting at the dental chair. Laboratory sessions include all phases of chairside assisting from seating the patient to post-operative care in the treatment room. (5 sch: 2 hr. lecture, 6 hr. lab)

Prerequisites: None

Competencies and Suggested Objectives:

1. Describe and demonstrate infection control procedures in a preclinic setting.
   a. Review safety procedures for preclinical setting.
   b. Demonstrate handwashing technique.
   c. Define terms related to sterilization.
   d. Prepare instruments for sterilization and storage.
   e. List in outline form all methods used in a dental office to disinfect or sterilize and demonstrate how to disinfect using a chemical agent.
   f. Differentiate between the different levels of EPA approved chemical disinfectants.
   g. State the importance of infection control.
   h. Describe the various modes of disease transmission.
   i. State the various factors related to disease producing capabilities.
   j. Define terms related to infection control.
   k. Differentiate between HBV and HIV.
   l. State OSHA guidelines regarding standard operating procedures for infection control.
   m. Describe barrier techniques.
   n. Demonstrate barrier placement.
   o. Demonstrate handling of instruments to maintain asepsis.

   Related Academic Topics (See Appendix A): C1, C2, C4, C6, M4, S2, S5, S8
   Workplace Skills (See Appendix B): WP1, WP2, WP3, WP5, WP6
2. Assess and record patient data.
   a. State the importance of taking an accurate medical and dental history.
   b. Recognize the vital signs of the patient:
      i. Pulse
      ii. Respiration rate
      iii. Blood pressure
      iv. Temperature
      v. Pupils of the eyes
      vi. State of consciousness

vii. Ability to move extremities
viii. Reaction to pain

c. Identify the equipment for measuring the vital signs.
d. Measure and record the following:
   i. Pulse
   ii. Temperature
   iii. Blood pressure
   iv. Respiration rate

Related Academic Topics (See Appendix A): C1, C3, C4, C6, M1, M4
Workplace Skills (See Appendix B): WP2, WP6

3. Describe the role of the assistant in chairside emergencies.
   a. Check the contents of the emergency kit and demonstrate knowledge of other emergency equipment.
   b. Demonstrate the role in providing first aid for the following medical emergencies:
      i. Shock (all types)
      ii Pulmonary arrest
      iii. Cardiac arrest
      iv. Diabetes mellitus
      v. Hypoglycemia
      vi. Epilepsy
      vii. Drug addiction
      viii. Angina pectoris
      ix. Heart attack
      x. Heart failure
      xi. Apoplexy
      xii. Choking
      xii. Fainting
   c. Discuss emergencies of dental origin and demonstrate emergency treatment.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, M1
   Workplace Skills (See Appendix B): WP2, WP3, WP6

4. Describe the equipment in a dental office.
   a. Identify the major components of a dental operating chair, and describe the procedures in performing minor adjustments on the chair.
   b. Identify the component parts of the dental unit and demonstrate how to operate the unit.
   c. Identify other major equipment in the dental laboratory and explain the use of each item.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6
   Workplace Skills (See Appendix B): WP2, WP6

5. Demonstrate the use of selected equipment found in a dental office.
   a. Perform the steps involved in the proper care of the dental operating chair and demonstrate use of the various levers and switches found on the chair.
   b. Demonstrate how to perform required maintenance on the dental operating unit and light.
   c. Apply water and air to the operating field without injuring tissue and maintain a clear mirror without impairing the vision of the operator.
   d. Position the evacuator tip for operating on the quadrants and for buccal, labial, and lingual approach without impairing the vision of the operator and without injuring the soft tissue. Demonstrate proper placement of the saliva ejector.
   e. Demonstrate how to use the autoclave and dry heat sterilizer.
   f. Receive the patient and adjust the dental chair for comfortable seating. Position patient for operating on teeth in each of the quadrants, and adjust the operating stools both for the dentist and assistant.
   g. Illustrate the positions of the patient, operator, and assistant during four-handed operative dentistry.

   Related Academic Topics (See Appendix A): C1, C3, C4, C6
   Workplace Skills (See Appendix B): WP2, WP5, WP6
6. Explain the role of the assistant in four-handed dentistry.
   a. Describe the role of each of the following in providing chairside dental care:
      i. Dental assistant
      ii. Dentist
   b. Relate the general duties to be performed in the early morning in preparation for the first patient, in preparing patient for treatment, in dismissing the patient, and as end-of-the-day responsibilities.
   c. Discuss the concept of dental assisting in four-handed dentistry technique.
   d. Relate duties performed by the dental assistant during an oral prophylaxis, and identify and anticipate the need for the instruments ordinarily used by the dentist to complete an oral prophylaxis.
   e. Demonstrate the role of the assistant in the amalgam procedure.
   f. Demonstrate the role of the assistant in a composite procedure.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6
   Workplace Skills (See Appendix B): WP2, WP3, WP5, WP6
7. Demonstrate the use of hand instruments.
   a. Demonstrate the various innovative techniques used in the interchange of hand instruments.
   b. Recognize the four parts of cutting and non-cutting instruments and recite basic instrument formulas.
   c. Demonstrate the principal instrument grasps used in four-handed dentistry.
   d. Obtain correct instrument from a preset tray and place it in the dentist's hand in the exact position for immediate use, receive one instrument and

deliver a new instrument with the same hand for delivery, and return the instrument to the proper position on the tray.

e. Demonstrate preparing medicaments for use according to specified standards, utilizing applicators or other devices, and demonstrate safe delivery of the medicaments for use by the dentist.
f. Apply a mirror, a tongue depressor, or a retractor to the cheek for operation on the quadrants without impairing the vision of the operator and without injury or discomfort to the patient.
g. Identify and describe the use of several items necessary in conducting a basic dental examination.
h. Relate the steps involved in an oral exam and identify armamentarium ordinarily used by the dentist.
i. Identify and describe instruments used in chairside dental assisting.
j. Identify, describe, and list the uses of the various instruments used in a base and amalgam procedure.

Related Academic Topics (See Appendix A): C1, C3, C4, C6, M5
Workplace Skills (See Appendix B): WP2, WP5, WP6

8. Demonstrate the use of rotary instruments.
   a. Assemble and disassemble the straight handpiece and identify its various parts.
   b. Explain the use of the prophylaxis handpiece and perform maintenance procedures on it.
   c. Identify the various rotary cutting instruments, and recite methods of identification of rotary cutting instruments.
   d. Identify the various sections of the angle handpiece, and perform maintenance procedures on it.
   e. Discuss the reasons for using ultra speed equipment, and discuss the maintenance of the equipment.

   Related Academic Topics (See Appendix A): C1, C3, C4, C6, M5
   Workplace Skills (See Appendix B): WP2, WP5, WP6
9. Explain and implement charting techniques.
   a. Identify and define the various types of dentition by arch, quadrant, and position.
   b. Utilize the Universal Numbering System in identifying teeth.
   c. Identify and describe symbols used in charting.
   d. Classify cavities according to their treatment.
   e. Chart existing restorations on both a permanent and deciduous chart.
   f. Chart cavities and any treatment needed by the patient on both permanent and deciduous charts.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, M1, M5
   Workplace Skills (See Appendix B): WP2, WP6
10. Describe and demonstrate the procedure for local anesthesia.
    a. Identify and describe the use of the items necessary in administering a local anesthetic and prepare anesthetic setup.

b. List steps involved in local anesthesia, and identify and anticipate the need for the type of instruments ordinarily used by the dentist in local anesthesia.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, M1, S5, S8
Workplace Skills (See Appendix B): WP2, WP6

11. Describe the amalgam procedure.
    a. Define operative dentistry and list the functions.
    b. List in sequence and discuss the steps of cavity preparation.
    c. Relate, in dental terms, the steps involved in amalgam restorations.
    d. Assemble and place a matrix band on a typodont.
    e. Identify and anticipate the need for the type instrument ordinarily used by the operator for an amalgam restoration.
    f. List the steps involved in polishing amalgam restorations, and identify and anticipate the necessary armamentarium for polishing the amalgam.

    Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, M4, S5, S8
    Workplace Skills (See Appendix B): WP2, WP6
12. Describe the composite procedure.
    a. Identify, describe, and list the uses of the various instruments used in composite resin restorations.
    b. List the steps involved in a composite resin procedure.
    c. Identify and anticipate the need for the instruments used by the dentist during a composite resin restoration.

    Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, M4, S5, S8
    Workplace Skills (See Appendix B): WP2, WP6
13. Describe and simulate the procedure for a temporary restoration.
    a. Identify instruments, materials, and procedure for a temporary restoration.
    b. Place and remove a temporary restoration in a role-play situation.

    Related Academic Topics (See Appendix A): C1, C3, C4, C6, M4, S5, S8
    Workplace Skills (See Appendix B): WP2, WP6
14. Describe chairside procedures for fixed prosthodontics.
    a. Recognize and identify instruments needed in crown and bridge procedures.
    b. Discuss the major steps involved in crown and inlay procedures.
    c. List and discuss the steps in preparing the tooth for the impression for a crown or inlay.
    d. Relate the steps involved in taking impressions and anticipate the armamentarium required.
    e. List the steps for cementation of a crown or inlay, and identify and anticipate the instruments needed.

    Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, S5, S8
    Workplace Skills (See Appendix B): WP2, WP6
15. Identify selected instruments used in an endodontic procedure.
    a. Identify and describe the use of each item required in an endodontic procedure.

Related Academic Topics (See Appendix A): C1, C2, C4, C6
Workplace Skills (See Appendix B): WP2, WP6

16. Identify selected instruments in oral surgery procedures.
    a. Recognize and identify surgical instruments and discuss the use of each surgical instrument.

    Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6
    Workplace Skills (See Appendix B): WP2, WP6

Course Name: Dental Radiology I

Course Abbreviation: DAT 1513

Classification: Vocational-Technical Core

Description: Principles and safety precautions in dental radiology. Laboratory sessions include positioning, exposing, processing, and mounting bite-wing, occlusal, and periapical dental radiographs. (3 sch: 2 hr. lecture, 2 hr. lab)

Corequisites: Dental Science I (DAT 1313) and Dental Orientation (DAT 1111)

Competencies and Suggested Objectives:

1. Describe the development of dental x-ray technology.
   a. Identify the historical events in the discovery of x-rays.
   Related Academic Topics (See Appendix A): C1, C3, C4, C6
   Workplace Skills (See Appendix B): WP2, WP6
2. Describe safety factors in relation to radiation biology.
   a. Answer and explain each of the questions patients most commonly ask about dental x-ray safety and procedures.
   b. Explain the principles of radiation used in radiology by defining terms such as atoms, neutrons, protons, and electrons.
   c. Describe the formation of ion pairs and discuss the effect of ionizing radiation on living tissues.
   d. Explain radiation measurement and define R, MR, RAD, REM, gonadal exposure, and whole body exposure.
   e. List the types of background radiation to which the population is exposed.
   f. Describe the differences between somatic and genetic tissues.
   g. Given a list of tissues, describe the sensitivity of body tissues to radiation by arranging the various tissues on a scale according to their increasing or decreasing sensitivity.
   h. List at least five symptoms of over-exposure to radiation.
   i. List the most common and earliest symptom of overexposure to radiation.
   j. Identify and discuss the objects used for protection of the patient and operator according to the safety standards of the state and federal health codes.
   k. Identify protective equipment and demonstrate how each device helps minimize radiation hazards.
   l. Discuss radiological considerations used for pregnant patients and/or patients with a history of radiation therapy.

m. Discuss the need for dental radiographs in oral diagnosis.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, M2, M4, M5, S5, S6, S7, S8

Workplace Skills (See Appendix B): WP1, WP2, WP3, WP4, WP6

3. Explain the properties of dental x-ray radiation.
   a. Define electromagnetic radiation and identify the various types of radiations on the electromagnetic spectrum.
   b. Be able to define the terms associated with electricity and how they relate to radiation production.
   c. List and discuss the three types of radiation associated with dental x-rays.
   d. Label the parts of an x-ray tubehead and describe the function of each part.
   e. Discuss in detail how x-rays are produced in the x-ray tubehead.
   f. Discuss the function and purpose of each of the controls on the control box of a dental x-ray machine.
   g. Define the terms milliamperage and kilovoltage, and discuss the relationship between milliamperage, kilovoltage, quality, quantity, wavelength, and penetration of x-rays.
   h. Describe the effects of filtration and collimation on x-ray production.
   i. List the recommended filtration and collimation for x-ray machines operating at various kVp settings.
   j. Differentiate between density, contrast, detail, and distortion.
   k. Explain the factors that influence contrast, detail, density, and distortion.
   l. Discuss how TFD affects the image on a radiograph.
   m. Explain the inverse square law.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, M2, M3, M5, S6, S8

   Workplace Skills (See Appendix B): WP2, WP5, WP6

4. Discuss auxiliary techniques in patient management for exposing radiographs.
   a. Discuss criteria involved in radiographing the mandibular and maxillary tori patient.
   b. Discuss techniques involved in radiographing narrow and cleft palate patients.
   c. Discuss techniques in radiographing children.
   d. Discuss techniques in radiographing edentulous patients.
   e. Discuss techniques used for taking x-rays on endodontic patients.
   f. Discuss techniques in exposing radiographs for handicapped patients.
   g. Discuss techniques used in radiographing patients with a gag reflex.
   h. Discuss criteria used in radiographing uncooperative patients.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, M5, M7, S6, S8

   Workplace Skills (See Appendix B): WP2, WP3, WP5, WP6

5. Differentiate various types of x-ray films.
   a. Identify the various types of dental x-ray film (both intraoral and extraoral), state the use of each, and demonstrate the proper care and storage of each according to the manufacturer.
   b. Explain the speed rating of dental x-ray film by relating what determines film speed, the effect of fast speed film, and speed groups of A to F.
   c. Identify the purposes of the three most commonly used extraoral films.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, M5, S8
   Workplace Skills (See Appendix B): WP2, WP6
6. Explain and demonstrate the processing of dental film.
   a. Describe the composition properties of an x-ray film.
   b. List and discuss the essential components of a well-equipped darkroom.
   c. Discuss the chemistry of development, fixation, washing, and drying of exposed radiographs.
   d. Explain the purpose of each chemical in the processing solutions. List the times for the exposed film to stay in each.
   e. Demonstrate the ability to operate the darkroom apparatus and equipment by producing an acceptable processed film.
   f. List the times and temperature for each of the solutions in processing an x-ray film.
   g. Clean and replenish the processing equipment and solutions.
   h. Identify processing errors and state the corrective procedures for each.
   i. Describe the procedure for the use of an automatic processor, for the procedure of quick processing, and for duplicating of radiographs.
   j. Demonstrate infection control procedures in the darkroom.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, M4, S5, S8
   Workplace Skills (See Appendix B): WP1, WP2, WP5, WP6
7. Identify normal anatomical landmarks used for mounting radiographs.
   a. Identify maxillary and mandibular anatomical landmarks and dental materials on a full mount series of radiographs.
   b. Identify maxillary and mandibular anatomical landmarks and dental materials on a panoramic radiograph.
   c. Mount radiographs in proper sequence using a full mouth series mount.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, M5, S1
   Workplace Skills (See Appendix B): WP2, WP6
8. Describe the techniques used in exposing intraoral radiographs.
   a. Discuss the two techniques used in making intraoral radiographs.
   b. Describe the film holders used and discuss the positioning of the patient and of the film.
   c. Demonstrate the proper positioning of the tubehead and the cone for each technique.
   d. Demonstrate the proper vertical and horizontal angulation needed for each technique.

e. Identify the purposes and uses of bitewing films.
f. Demonstrate the positioning of the bitewing film, including vertical and horizontal angulation.
g. Position, expose, and process a full mouth of periapical film, including maxillary and mandibular anterior film, and maxillary and mandibular posterior film.
h. Recognize radiographs found unacceptable for diagnostic purposes, identify the errors and their causes, and state appropriate corrective action.
i. Position, expose, and process an occlusal film and identify any errors that may occur.
j. Identify the purpose of taking an occlusal film.
k. Prepare operatory using proper infection control techniques.
l. Expose film following proper infection control techniques.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, M5, M7, S1, S8

Workplace Skills (See Appendix B): WP2, WP3, WP5, WP6

9. Describe the techniques used in exposing extraoral radiographs.
   a. Demonstrate the technique for positioning, exposing, and processing the three most common extraoral film exposures.
   b. Demonstrate the operation of the panoramic machine.
   c. Demonstrate the technique for positioning, exposing, and processing panoramic film on a patient.
   d. Discuss the correct settings for the panoramic machine on different types of patients.
   e. Prepare operatory using proper infection control techniques.
   f. Expose film following proper infection control techniques.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, M5, M7, S1, S8

   Workplace Skills (See Appendix B): WP2, WP3, WP5, WP6

Course Name: Practice Management

Course Abbreviation: DAT 1714

Classification: Vocational-Technical Core

Description: Comprehensive study of the dental office business procedures. Topics covered: patient contact, patient records, insurance, financial records, telephone usage, office management, basic skills in psychology, and professional ethics. (4 sch: 3 hr. lecture, 2 hr. lab)

Prerequisites: None

Competencies and Suggested Objectives:

1. Describe duties of the dental office personnel.
   a. List the principal duties of the dental assistant, the dental hygienist, and the laboratory technician.

   Related Academic Topics (See Appendix A): C1, C2, C4, C6, S8
   Workplace Skills (See Appendix B): WP1, WP2, WP3, WP5, WP6
2. Discuss telephone etiquette.
   a. List and explain the items needed near the telephone and discuss good telephone habits.
   b. Demonstrate the ability to handle incoming telephone calls.
   c. Place telephone calls to make or change appointments, order supplies, etc.
   d. Discuss how to schedule appointments, change appointments, confirm appointments, handle broken appointments, and make emergency appointments.
   e. Discuss the professional responsibility of the office to maintain an accurate recall system.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6
   Workplace Skills (See Appendix B): WP1, WP2, WP3, WP6
3. Describe various record keeping procedures.
   a. Complete a patient registration form.
   b. State the importance of a medical/dental history.
   c. Review treatment charts and charting symbols.
   d. Discuss the different methods of filing patient/business records.
   e. Discuss the basic rules of any type of filing.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, M1, M7
   Workplace Skills (See Appendix B): WP1, WP2, WP3, WP6
4. Explain and prepare a dental insurance form.
   a. Define dental insurance terms and coverage.

b. Complete an insurance form (attending dentist statement).
c. Discuss current trends involving third party payors (managed care, HMO, PPO, etc.) and how these may affect the future of dentistry.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, M1, M7
Workplace Skills (See Appendix B): WP1, WP2, WP3, WP6

5. Describe bookkeeping procedures in a dental office.
   a. Discuss different bookkeeping systems.
   b. Describe methods of recording and charging payments.
   c. Demonstrate making pegboard entries, charge slips, and ledger cards.
   d. Demonstrate knowledge of banking by writing a check, preparing a bank deposit, and reconciling a bank statement.
   e. Discuss what a statement is and when statements are prepared.
   f. Discuss the different methods of collection and when each method is indicated.
   g. Define overhead, gross income, and net income.
   h. Define and describe an inventory system and the terms associated with supplies and inventory.
   i. Define the terms associated with disbursements (COD, petty cash, etc.).
   j. Define withholding and FICA.
   k. Demonstrate how to compute payroll.
   l. Be familiar with remittance to the government regarding taxes.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, M1, M7
   Workplace Skills (See Appendix B): WP1, WP2, WP3, WP6

6. Discuss general office procedures.
   a. Know how to handle incoming and outgoing mail.
   b. Be familiar with business letter forms.
   c. Discuss general office correspondence.
   d. State the purpose of an office manual and describe its content.

   Related Academic Topics (See Appendix A): C1, C3, C4, C6, M7
   Workplace Skills (See Appendix B): WP1, WP2, WP3, WP5, WP6

7. Utilize dental-related computer software.
   a. State the uses of the computer in the dental office.
   b. Demonstrate the use of dental practice management computer software:
      i. Appointments.
      ii. Billing.
      iii. Generating insurance forms.
      iv. Patient records.
      v. General office correspondence.

   Related Academic Topics (See Appendix A): C2, C3, C4, C5, C6, M1, M7
   Workplace Skills (See Appendix B): WP1, WP2, WP6

8. Describe employability skills.
   a. Discuss why professional work ethics are important to you and the office.
   b. Know where to look for job opportunities for dental assistants.
   c. Know what is important to you when seeking a position.

d. Be able to discuss what a resume is, what information it should include, and how to prepare one.
e. Know the purpose of the cover letter and how to prepare one.
f. Know how to dress for an interview and what questions may be asked.
g. Discuss the importance of the interview and list some do's and don'ts for the interview.
h. Discuss ways to adjust to the job and new environment quickly and smoothly.
i. List ways to continue to learn after graduation from this program.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6
Workplace Skills (See Appendix B): WP2, WP3, WP6

9. Discuss interpersonal skills needed in the dental practice.
   a. List and explain the environmental factors which have a psychological effect on the patient.
   b. Discuss the role of each member of the dental team.
   c. Discuss the employee's relationship to the formal and informal systems of the dental office.
   d. Discuss the development of one's personality and how it can affect patients in the office for treatment.
   e. Describe patients' fears related to the dental office and to dental treatment.
   f. Be able to differentiate fears that adults have from those of children.
   g. Discuss ways that a dental team can reduce anxiety and fear in their patients.
   h. Discuss ways to communicate with patients, fellow employees, and the dentist.
   i. List some ways to reduce stress while working in the dental office.
   j. List the most common reactions or responses to stress and frustrations associated with the dental office.
   k. List some do's and don'ts for work in the dental office while you are working.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6
   Workplace Skills (See Appendix B): WP2, WP3, WP6

Course Name: Dental Science II

Course Abbreviation: DAT 1323

Classification: Vocational-Technical Core

Description: Embryology, pharmacology, microbiology, and pathology as related to dentistry. Content organized to give the student basic information required for effective dental assisting. (3 sch: 3 hr. lecture)

Prerequisites: None

Competencies and Suggested Objectives:

1. Discuss embryology as related to dentistry.
   a. Identify and state the function of the following components of a cell:
      i. Nucleus
      ii. Cytoplasm
      iii. Cell membrane
      iv. Ribosomes
      v. Mitochondria
      vi. Centrioles
      vii. Golgi body
      viii. Chromatin (chromosomes)
      ix. Lysosomes
   b. Describe the various functions of cells including the usage of nucleic acids (DNA and RNA).
   c. Explain the differences between mitosis and meiosis by stating and/or drawing the various stages of each process.
   d. State the characteristics and functions of the four primary types of human tissue.
   e. Name the three basic embryonic cell layers and relate the structures that form each.
   f. Discuss the branchial arches and name the structures that form each of the arches.
   g. Identify and discuss the processes in the early development of the nose and face.
   h. Discuss the early development of the tongue and palate.
   i. List and discuss briefly each of the factors that can affect prenatal development.
   j. List and discuss each stage of tooth development.
   k. Discuss the composition and formation of each of the four major tissues of the teeth.
   l. Discuss the formation of the tissues surrounding the teeth.

m. Discuss eruption problems.
n. Discuss the process of eruption of the teeth.
o. Discuss the eruption sequence for the primary teeth and give the approximate ages for each primary tooth erupting into the oral cavity.
p. State which permanent teeth are succedaneous and which are not.
q. Discuss the eruption sequence for the permanent teeth and give the approximate ages for each erupted permanent tooth.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, S1, S7
Workplace Skills (See Appendix B): WP2, WP6

2. Discuss pharmacology as related to dentistry.
   a. Define pharmacology.
   b. Describe the different parts of the Controlled Substances Act as follows:
      i. Schedule I
      ii. Schedule II
      iii. Schedule III
      iv. Schedule IV
      v. Schedule V
   c. State the difference between generic drugs and brand name drugs.
   d. Identify the parts of a prescription and tell the purpose of each.
   e. Tell the purpose of a prescription.
   f. Identify the English equivalents of the Latin abbreviations used on a prescription.
   g. Discuss the differences between methods of administering drugs.
   h. Identify and be able to use the two methods of drug calculation.
   i. Identify three factors in a dental office that can lead to deterioration of medications and drugs.
   j. Define the terms associated with the effects of drugs on the body.
   k. Discuss the following drugs including indications and contraindications:
      i. Analgesics
         (1) Mild analgesics
            (a) Aspirin
            (b) Aspirin-like substitutes
         (2) Strong analgesics
            (a) Morphine
            (b) Codeine
            (c) Dilaudid
            (d) Percodan
            (e) Demerol
            (f) Mepergan Fortis
      ii. Antibiotics
         (1) Penicillin
         (2) Erythromycin
         (3) Tetracycline
         (4) Amoxicillin

iii. Miscellaneous drugs used in the dental office on patients
   (1) Nystatin
   (2) Vasoconstrictors
   (3) Corticosteroids
   (4) Atropine
   (5) Hemostatic agents
   (6) Topical anesthetics
   (7) Local anesthetics
   (8) Fluorides
   (9) Dentifrices
   (10) Nitrous oxide
   (11) Sedatives
      (a) Chloral hydrate
      (b) Atarax
      (c) Vistaril

l. State the purpose of the following drugs commonly seen on a patient's medical history:
   i. Nitroglycerin
   ii. Quinidine
   iii. Digitalis
   iv. Diuril
   v. Chlorothiazide
   vi. Valium
   vii. Librium
   viii. Dilantin
   ix. Coumadin
   x. Corticosteroids
   xi. Insulin
   xii. Digitoxin
   xiii. Thyroxin

m. Identify the brand names and chemical names of commonly used local anesthetics in the dental office.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, S1, S5
Workplace Skills (See Appendix B): WP2, WP6

3. Discuss microbiology as related to dentistry.
   a. Prepare a short paper reporting the major events of the history of microbiology.
   b. Recite the five different types of microorganisms and give the physical characteristics of each (protozoa, bacteria, fungi, virus, rickettsia).
   c. Identify the major parts of a microscope and demonstrate the proper care and use of the scope.
   d. Prepare a mouth smear.
   e. Identify the three shapes of bacteria using prepared slides and the microscope.

f. List methods by which microorganisms produce disease and define terms associated with pathogenic and non-pathogenic microorganisms.
g. Discuss methods by which disease may be transmitted in a dental office.
h. Discuss resistance to infection by the host and define the related terms.
i. Define inflammation and list the signs related to inflammation.
j. Discuss microorganisms associated with dental caries, periodontal problems, and pulp conditions.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, S1 S2
Workplace Skills (See Appendix B): WP2, WP6

4. Discuss oral pathology as related to dentistry.
   a. List and define the three factors which cause oral disorders.
   b. Discuss reaction of tissue to injury, and relate the behavior of cells and the structural changes that result from injury
   c. Identify and describe distinguishing characteristics of developmental anomalies that occur in the oral cavity.
   d. Identify and describe characteristics of developmental anomalies that occur in tooth development.
   e. List and define terms describing hard tissue defects that may occur during tooth formation.
   f. Define terms relative to pathological conditions that occur after the teeth have erupted.
   g. Explain the pathological and developmental conditions of dental caries as characterized by decalcification and microbial invasion.
   h. Describe dental pulp disorders by defining given terms, stating the conditions and treatment of the disorder.
   i. Write a brief descriptive account of periodontal conditions.
   j. Given a list of oral mucous membrane conditions, briefly define the terms.
   k. Define conditions that are caused by viral infections.
   l. Describe canker sores and relate the causative agent.
   m. Identify diseases caused by fungus infections.
   n. Define benign neoplasm and briefly define examples from a given list.
   o. Define malignant neoplasms.
   p. Prepare a brief report on oral cancer stating factors that appear to predispose to oral cancer and indicating high risk areas by listing of the oral cavity in order of frequency.
   q. Briefly discuss oral pigmentation, traumatic, thermal, and chemical injuries to the teeth and related structures.

   Related Academic Topics (See Appendix A): C1, C2 C3, C4, C6, S1, S2, S7
   Workplace Skills (See Appendix B): WP2, WP6

Course Name: Clinical Experience I

Course Abbreviation: DAT 1815

Classification: Vocational-Technical Core

Description: Supervised clinical experience in an authorized dental clinic. (5 sch: 1 hr. lecture, 16 hr. clinical)

Prerequisites: Chairside Assisting I (DAT 1415)

Competencies and Suggested Objectives:

1. Correlate skills from areas with knowledge obtained from didactic and preclinical experiences.
   a. Apply the knowledge learned in the formal academic program to the functioning dental practice.
   b. Demonstrate the ability to successfully work with the dental team in the cooperating dental office according to established standards.
   c. Perform those chairside responsibilities taught in the formal program to the satisfaction of the cooperating dentist and the supervising instructor.
   d. Process and mount dental x-rays according to the standards acceptable to the supervising dentist.
   e. Perform sub-professional tasks in the dental laboratory, such as pouring up and trimming study models, custom made trays, etc.
   f. Demonstrate ability to answer the telephone, make appointments, prepare records, and make collections according to standards acceptable to the cooperating dentist and the instructor.
   g. Record clinical experiences in a journal.
   h. Prepare case presentations relating to each clinical rotation.

   Related Academic Topics (See Appendix A): C3, C4, C5, C6, M1, M4, M5, M7, S1, S2, S5, S6, S7, S8

   Workplace Skills (See Appendix B): WP1, WP2, WP3, WP5, WP6

Course Name: Dental Radiology II

Course Abbreviation: DAT 1522

Classification: Vocational-Technical Core

Description: Continuation of Dental Radiology I. Emphasis placed on clinical competence in exposing periapical radiographs. (2 sch: 4 hr. lab)

Prerequisites: Dental Radiology I (DAT 1513)

Competencies and Suggested Objectives:

1. Correlate skills from areas with knowledge obtained from didactic and preclinical experience.
   a. Take 4 sets of full mouth x-rays on mannequins.
   b. Take 7 sets of full mouth x-rays on patients.
   c. Identify the sequence of steps followed to operate the dental x-ray machines.
   d. Demonstrate the procedures for maintaining radiation safety.
   e. Identify and compare the various intraoral films according to size, customary usage, and film speed.
   f. Explain the procedure for film duplicating, in the correct sequence.
   g. Demonstrate correct methods of film handling and storage.
   h. Demonstrate the sequence of steps in processing radiographs.
   i. Determine whether a periapical radiograph is of the right or left side by placing it correctly in a mount.
   j. Position the cone for any given periapical radiograph according to its exact location in the maxilla or mandible.
   k. Identify the types of radiographic errors caused by faulty exposure techniques.
   l. Identify the types of radiographic errors caused by incorrect film positioning and angulation of the central ray.
   m. Identify the types of radiographic errors caused by faulty processing techniques.
   n. Identify the conditions that cause radiographs to be fogged.
   o. Compare the principles of the paralleling and bisecting techniques.
   p. Locate the points of entry on the face.
   q. Differentiate between the method used to obtain proper horizontal and vertical angulation.
   r. Identify the advance preparations required before radiographs are exposed.
   s. Select the type and number of film required to make a complete periapical survey.

t. Assemble and position film holders for the paralleling and bisecting the angle techniques.
u. Differentiate between the method of positioning the film packet when using the bisecting and the paralleling techniques.
v. Select the type and number of films required to make the bitewing survey.
w. Demonstrate the difference between periapical and bitewing radiographs.
x. Demonstrate on patients the methods of holding the bitewing film in position.
y. Identify the positions of film placement and the vertical and horizontal angulations normally used for bisecting the angle method.
z. Produce at least two panoramic dental x-rays on human patients. These must be of acceptable quality.
aa. Do film processing, including the mounting in a full mouth mount.

Related Academic Topics (See Appendix A): C1, C3, C4, C5, C6, M1, M5, M7, S1, S2, S6, S7, S8

Workplace Skills (See Appendix B): WP1, WP2, WP3, WP5, WP6

Course Name: Chairside Assisting II

Course Abbreviation: DAT 1423

Classification: Vocational-Technical Core

Description: Continuation of the study of information related to assisting at the dental chair. Emphasis on techniques utilized in performing all dental procedures at the chair. Special consideration to assisting in the dental specialties. (3 sch: 2 hr. lecture, 2 hr. lab)

Pre/corequisites: Chairside Assisting I (DAT 1415)

Competencies and Suggested Objectives:

1. Describe oral surgery procedures.
   a. List the stages of surgical procedures.
   b. Perform preoperative preparation for oral surgery.
   c. List and define the four planes of general anesthesia.
   d. Differentiate between analgesic and anesthetic.
   e. State the application of N_2O to dentistry.
   f. State the necessary precautions applicable to N_2O and the dental office.
   g. List the proper equipment necessary for N_2O administration in the office.
   h. Demonstrate the proper steps in N_2O administration.
   i. Discuss appropriate care and storage of nitrous and oxygen tanks.
   j. Relate, in dental terms, the steps involved in the removal of maxillary and mandibular teeth.
   k. Identify and anticipate the need for the type of instruments ordinarily used by the dentist in the extraction of the mandibular teeth.
   l. Identify and anticipate the need for the type of instruments ordinarily used by the dentist in the extraction of each of the maxillary teeth.
   m. List the steps involved in the removal of impacted teeth, and identify and anticipate the need for the instruments ordinarily used by the dentist to accomplish this procedure.
   n. Relate, in dental terms, the steps involved in placing a suture, and identify and anticipate the need for the type of instrument ordinarily used to place a suture.
   o. Demonstrate how to remove a suture placed in the oral cavity.
   p. Assist with and/or control minor bleeding after extraction or incision.
   q. Assist with, mix, change, and/or remove post-extraction dressings.
   r. List the conditions associated with a dry socket and the steps involved in treating, and identify and anticipate the need for the necessary instruments.

s. Identify the steps involved in frenectomy, and identify and anticipate the necessary instruments for the procedure.
t. List the steps involved in the performance of an alveolectomy, and identify and anticipate the need for the instruments ordinarily used by the dentist in this procedure.
u. Relate, in dental terms, the steps involved in a biopsy, and identify and anticipate the need for the type of instruments ordinarily used by the dentist during the procedure.
v. List the steps involved in removing a cyst, and identify and anticipate necessary instruments for the procedure.
w. List the major steps involved in the treatment of a jaw fracture, and identify the necessary instruments needed to complete the procedure.
x. State the cause and characteristics of infections, and identify the stages of infection.
y. Be able to give post-operative instructions to the patient.
z. Provide appropriate care and storage of sterile and sterile disposable products.
aa. Recognize medications related to the patient's present and/or past medical/dental history.
bb. Demonstrate preventive measures to be used following drug administration to avoid drug-induced emergencies.
cc. Recognize signs and symptoms related to specific dental conditions/emergencies likely to occur in the office.
dd. Implement and/or assist with appropriate procedures for the management of dental emergencies.
ee. Implement techniques for the prevention of medical emergencies in patients with past medical problems.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, M1, M4, M7, S1, S2, S5, S8

Workplace Skills (See Appendix B): WP2, WP6

2. Describe peridontal procedures.
   a. Have an overview of normal periodontium.
   b. List the diagnostic tools used in the evaluation of periodontal disease.
   c. Use plaque and gingival index to record symptoms of gingivitis.
   d. Discuss the local factors in the etiology of periodontal disease.
   e. Explain the factors involved in an oral prophylaxis and recite information that should be given to the patient as to the need for the regular oral prophylaxis.
   f. Have an overview of the incidence of calculus position and describe the removal of calculus by the dentist or hygienist.
   g. List the armamentarium needed for polishing the teeth following scaling and demonstrate proper technique for polishing in a preclinical setting.
   h. Define pericoronitis and describe treatment of the condition.

i. Relate, in dental terms, the steps involved in subgingival curettage, and identify and anticipate the instruments ordinarily used by the dentist.
j. Define gingivectomy and relate the order of steps normally used during this procedure.
k. Identify and anticipate the need for the type of instruments ordinarily used by the dentist while performing a gingivectomy and relate dental assistant duties during the surgery.
l. List the order of procedure for post-operative treatment of a gingivectomy.
m. Assist with, mix, change, and/or remove periodontal surgical dressings and sedative dressings.
n. Demonstrate knowledge of osseous corrective surgery by preparing a written report.
o. Recognize a dull instrument and discuss the different methods of sharpening an instrument.
p. Demonstrate how to sharpen the assigned instrument using an Arkansas stone.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, M1, M4, M7, S1, S2, S5, S8

Workplace Skills (See Appendix B): WP2, WP6

3. Describe endodontic procedures.
   a. Identify and describe the use of each item required in rubber dam application.
   b. List the steps involved in the application of the rubber dam, and identify and anticipate the need for the type armamentarium ordinarily used by the dentist in a rubber dam application.
   c. Place a rubber dam correctly on a dentiform and discuss during the procedure the steps performed.
   d. Define endodontics and recite the most common endodontic procedures performed in the dental office.
   e. List traumatic injuries that may occur in teeth.
   f. List the names and clinical manifestations of dental pulp diseases.
   g. State the diagnostic method used in pulpal and periapical conditions.
   h. Identify steps in performing a vitality test.
   i. Demonstrate proper isolation of teeth and control of saliva.
   j. Identify and demonstrate proper use of root canal instruments.
   k. Discuss bacteriology as related to endodontics.
   l. State objectives and procedures used in pulp capping and pulpotomies.
   m. List the steps involved in root canal therapy for all sessions of the treatment phase, and identify and anticipate necessary instruments used in the procedure.
   n. Define apicoectomy and relate the order of steps normally used during the procedure.

o. Define bleaching and relate the order of procedure normally used.
Related Academic Topics (See Appendix A): C1, C2, C3, C4, C6, M1, M4, M7, S1, S2, S5, S8
Workplace Skills (See Appendix B): WP2, WP6

Course Name: Dental Health Education

Course Abbreviation: DAT 1612

Classification: Vocational-Technical Core

Description: Study of the nutritional needs of the body. Emphasis on nutritional requirements for maintaining good oral hygiene. Comprehensive study of the dental assistant's responsibilities in patient education as related to good oral health. (2 sch: 2 hr. lecture)

Prerequisites: None

Competencies and Suggested Objectives:

1. Discuss preventive dental procedures.
   a. Give an overview of the philosophy of preventive dentistry as related to dental and community education.
   b. Define special dental health needs due to physical status, age, etc.
   c. Define plaque and state its relationship to caries and periodontal disease.
   d. Recite guidelines for purchasing a new toothbrush, and discuss the use of automatic toothbrushes.
   e. Describe and demonstrate the various methods of toothbrushing, and be able to list reasons for various methods.
   f. Discuss the usage of dental floss and demonstrate the use of dental floss.
   g. Define dentifrices and list the agents that make up a dentifrice.
   h. Describe the forms of dentrifices and list the various types of dentifrices available to the public.
   i. List various other oral hygiene aids and describe the use of each.
   j. When given treatment procedure by the dentist, formulate these procedures into a treatment plan to be presented to the patient.
   k. Evaluate patient's oral health care status and habits.
   l. Evaluate the patient's progress in and response to home-care therapy.
   m. Prepare oral hygiene instructions (OHI) that are suitable for the average patient and demonstrate knowledge by giving the OHI to other students.
   n. Prepare a suitable handout teaching the average patient how to maintain good oral hygiene.
   o. Describe various audiovisual aids and, given appropriate equipment, demonstrate how they can be used in patient education.
   p. Review the order of procedures for a prophylaxis.
   q. List the sources of fluoride, and explain the benefits of fluorides when added to the community water supply.
   r. Explain the methods of topical application of fluoride.

s. Prepare a report on one of the following:
   i. Modalities of fluoride
   ii. Etiology of periodontal disease
   iii. Extramural community experience
   iv. Oral physiotherapy

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, M1, S1, S5

Workplace Skills (See Appendix B): WP2, WP3, WP6

2. Discuss the role of nutrition in dental health.
   a. State the relationship that diet and nutrition have with good oral and dental health.
   b. Define nutrition, nutrients, diet, calorie, malnutrition, and metabolism.
   c. List factors that influence food habits.
   d. Name the groups in the Food Pyramid, give an example of each group, and name the essential nutrient each group provides.
   e. List the six essential nutrients.
   f. List the elements from which proteins are formed, how they are digested and utilized by the body, and what function they serve.
   g. List the elements from which carbohydrates are formed, how they are digested and utilized by the body, and what function they serve.
   h. Describe to the patient the role that carbohydrates play in dental disease.
   i. Prepare a sweet intake summary.
   j. List the elements from which fats are formed, how they are digested and utilized by the body, and what functions they serve.
   k. List the elements from which water is formed, how it is digested and utilized by the body, and what functions it serves.
   l. List the elements from which minerals are formed, how they are digested and utilized by the body, and what functions they serve.
   m. List the elements from which vitamins are formed, how they are digested and utilized by the body, and what functions they serve.
   n. Discuss how nutritional deficiencies are reflected in the oral cavity.
   o. Complete a dietary evaluation on a patient.
   p. Plan a diet (using all pertinent information) acceptable for a:
      i. Child with rampant caries
      ii. Surgery patient
      iii. Jaw fracture patient
      iv. TMJ patient
      v. Periodontal patient
   q. Discuss the diet and nutrition of special situation patients:
      i. Caries
      ii. Periodontal patient
      iii. Pregnancy and lactation
      iv. Pedodontic
      v. Stress infection, injury

vi. Aging patient
vii. Systemic disease
viii. Cancer patient

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, M1, M7, S1, S5

Workplace Skills (See Appendix B): WP2, WP3, WP6

Course Name: Clinical Experience II

Course Abbreviation: DAT 1822

Classification: Vocational-Technical Core

Description: Continuation of supervised clinical experience in an authorized dental clinic. (2 sch: 8 hr. clinical)

Pre/corequisites: All first semester Dental Assisting courses

Competencies and Suggested Objectives:

1. Correlate skills from areas with knowledge obtained from didactic and preclinical experiences
   a. Apply the knowledge learned in the formal academic program to the functioning dental practice.
   b. Demonstrate ability to successfully work with the patient and the dental health team according to standards established by the supervising instructor.
   c. Demonstrate ability to successfully work with the dental team in the cooperating dental office according to the established standards.
   d. Perform those chairside responsibilities taught in the formal program to the satisfaction of the cooperating dentist and the supervising instructor.
   e. Process and mount dental x-rays according to the standards acceptable to the supervising dentist. When given the responsibility, place and expose dental x-rays according to the standards acceptable to the supervising dentist.
   f. Perform sub-professional tasks in the dental laboratory, such as pouring up and trimming study models, custom made trays, etc.
   g. Demonstrate ability to answer the telephone, make appointments, prepare records, and make collections according to standards acceptable to the cooperating dentist and the instructor.
   h. Record clinical experiences in a journal.

   Related Academic Topics (See Appendix A): C3, C4, C5, C6, M1, M4, M5, M7, S1, S2, S5, S6, S7, S8

   Workplace Skills (See Appendix B): WP1, WP2, WP3, WP5, WP6

Course Name: Chairside Assisting III

Course Abbreviation: DAT 1433

Classification: Vocational-Technical Core

Description: Continuation of Chairside Assisting II (3 sch: 2 hr. lecture, 2 hr. lab)

Pre/corequisites: Chairside Assisting II (DAT 1423)

Competencies and Suggested Student Objectives:

1. Describe and demonstrate the procedure for fixed prosthodontics.
   a. Define and state the importance of fixed prosthesis.
   b. List types of bridges, types of facings, and materials used for bridge fabrication.
   c. List the steps involved in bridge fabrication.
   d. Demonstrate how to make a preliminary impression.
   e. Pour the impression to the specification of the instructor.
   f. Given a set of poured models, separate, trim, and articulate the models.
   g. Demonstrate the ability to prepare a temporary prosthesis.
   h. Demonstrate the ability to prepare an acrylic (custom) tray.
   i. Given a hydrocolloid or rubber base impression material, select the appropriate tray, measure, mix or condition the material, and load the tray for acceptance and placement by the operator.
   j. Receive the impression from the operator, and store or prepare it for pouring according to the recommendations of the manufacturer.
   k. Identify and make a removable die.
   l. Outline investment and casting procedures according to instructor's criteria.
   m. Relate the steps involved in the cementation of a fixed prostheses and identify and anticipate the operator.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, M1, M4, M5, S8

   Workplace Skills (See Appendix B): WP2, WP6
2. Describe and demonstrate procedures for removable prosthodontics.
   a. List the steps involved in the preliminary impression, final impression, registration of jaw relations, try-in, and insertion of partial denture.
   b. Demonstrate the ability to use various armamentarium needed to accomplish steps involved in partial denture prosthesis.
   c. List the major steps involved in taking the preliminary impression, final impression, registration of jaw relations, try-in, and insertion of complete denture prosthesis.

d. Demonstrate the ability to prepare and assist with various armamentarium needed to accomplish steps involved in complete denture prosthesis.
e. Demonstrate the ability to clean a broken appliance.
f. Demonstrate the ability to clean and polish an appliance.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, M1, M4, M5, S8

Workplace Skills (See Appendix B): WP2, WP6

3. Describe and demonstrate procedures for pedodontics.
   a. Define pedodontics, give a brief history of the specialty, and discuss need and demand for pedodontics in our society.
   b. Discuss the primary dentition including description, importance, eruption, and occlusion.
   c. Discuss pedodontic practice management.
   d. Relate behavior patterns of the child to the dental office, and discuss growth and development in stages of 1-6 years and 6-12 years.
   e. Show ability to work effectively with handicapped and problem patients.
   f. State the role of the parent in successful pedodontic procedures.
   g. Discuss the related guidelines helpful to the dental assistant in the following pedodontic procedures: first appointment and consultation appointment.
   h. State the importance of preventive dentistry for children.
   i. Select and prepare armamentarium for fluoride treatment and demonstrate the procedure for applying fluoride.
   j. Explain the various modalities of fluoride administration and the dangers and results of overdosage.
   k. Demonstrate the use of autopolymerizing pit and fissure sealants.
   l. Demonstrate the use of light activated pit and fissure sealants.
   m. Discuss the assistant's role in operative pedodontics.
   n. Identify instruments and list steps involved in chrome crown.
   o. Explain the procedure involved in pulp therapy (pulp capping and pulpotomy).
   p. Assemble the proper armamentarium for endodontic procedures performed in pedodontics.
   q. State the importance of prosthetics in pedodontics.
   r. Assemble the proper armamentarium for prosthetic procedures in the pedodontic office.
   s. Discuss procedures used in emergency treatment for traumatized teeth and apply knowledge at chairside.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, M1, M4, S8

   Workplace Skills (See Appendix B): WP2, WP6

4. Describe and demonstrate procedures for orthodontics.
   a. Define orthodontics and list the goals that orthodontists strive to achieve.
   b. Discuss the history of orthodontics.

c. Discuss etiology as it pertains to orthodontics.
d. Review embryology and histology relating to the formation of the skull and facial complex.
e. Define diagnosis, occlusion, and malocculsion.
f. State the classification of malocclusion according to Dr. Angle.
g. Discuss the diagnostic aids used by the orthodontist in treatment planning.
h. Describe the principles of tooth movement.
i. Describe all types of orthodontic appliances used in treatment:
    i. Retainer
    ii. Crozat
    iii. Edgewise
    iv. Habit
j. Identify instruments and equipment used in orthodontic treatment.
k. Apply knowledge by assembling armamentarium for treatment.
l. Discuss responsibilities of the patient and parent during treatment.
m. Describe the removal of cement after a permanent appliance is removed.

Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, C6, M1, M5, M7, S1

Workplace Skills (See Appendix B): WP2, WP6

RELATED VOCATIONAL-TECHNICAL COURSES

Course Name: Fundamentals of Microcomputer Applications

Course Abbreviation: CPT 1113

Classification: Related Vocational-Technical (From Business and Office and Related Technology Cluster)

Description: This course will introduce information processing concepts to include: work processing, spreadsheet, and database management software. **Service course; not to be taken by Business and Office and Related Technology students.** (3 sch: 2 hr. lecture, 2 hr. lab)

Prerequisites: None

Competencies and Suggested Objectives:

1. Discuss hardware components.
   a. Describe the input, output, and storage elements of the information processing cycle and explain each element.
   b. Describe and discuss the three main classifications of the computer to include micro, mid-range, and mainframes.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, M1, S8
   Workplace Skills (See Appendix B): WP2, WP4, WP6
2. Explain classes of software.
   a. Describe functions of systems software.
   b. Identify widely used software applications.
   c. Discuss various high level languages.
   d. Discuss data organization.

   Related Academic Topics (See Appendix A): C1, C2, C3, C4, C5, M1, S8
   Workplace Skills (See Appendix B): WP2, WP4, WP6
3. Create and print mailable documents.
   a. Develop keyboarding skills.
   b. Prepare letters using full block style.
   c. Use word processing software to produce documents.

   Related Academic Topics (See Appendix A): C1, C2, C4, C5, M1, S8
   Workplace Skills (See Appendix B): WP2, WP4, WP6
4. Create and print spreadsheet.
   a. Use spreadsheet software to produce acceptable worksheets.
   b. Generate graphs from worksheets.

   Related Academic Topics (See Appendix A): C1, C2, C4, C5, M1, M7, S8
   Workplace Skills (See Appendix B): WP2, WP4, WP6
5. Create and print database files.
   a. Use database software to produce databases.
   b. Edit database records.

c. Print reports.

Related Academic Topics (See Appendix A): C1, C2, C4, C5, M1, M7, S8
Workplace Skills (See Appendix B): WP2, WP4, WP6

6. Integrate application information.
   a. Merge a database with a word processing letter.
   b. Merge a spreadsheet with a letter.

Related Academic Topics (See Appendix A): C1, C2, C4, C5, M1, M7, S8
Workplace Skills (See Appendix B): WP2, WP4, WP6

RELATED ACADEMIC COURSES

Course Name: English Composition I

Course Abbreviation: ENG 1113

Classification: Related Academic

Description: A study of grammar and composition, with emphasis on the sentence and the paragraph. Readings, frequent themes.

July 30, 1996

Course Name: English Composition II

Course Abbreviation: ENG 1123

Classification: Related Academic

Description: A continuation of ENG 1113 with emphasis on the whole composition. Readings, themes, and research paper required.

Course Name: Oral Communications (Principles of Speech)

Course Abbreviation: SPT 1113

Classification: Related Academic

Description: Correct and effective English; correct pronunciation and enunciation; breath control; study and practice in making speeches for all occasions, major emphasis on organization of material; and practice in speaking before the group.

July 30, 1996

Course Name: Anatomy and Physiology I

Course Abbreviation: BIO 1514

Classification: Related Academic

Description: A lecture/laboratory course dealing with the anatomical and physiological study of the human body, particularly the molecular, cellular, tissue, organs, and systems. Each system is considered in detail regarding both structure and function.

Course Name: Anatomy and Physiology II

Course Abbreviation: BIO 1524

Classification: Related Academic

Description: A lecture/laboratory course of the systems listed but not covered in BIO 1514.

July 30, 1996

Course Name: General Biology I

Course Abbreviation: BIO 1134

Classification: Related Academic

Description: A lecture/laboratory course in basic biological principles including chemical and cellular basis of life, anatomy and physiology, reproduction, genetics, organismal complexity, classification, biosocial problems and ecology.

July 30, 1996

Course Name: General Biology II

Course Abbreviation: BIO 1144

Classification: Related Academic

Description: A lecture/laboratory course of the basis principles listed but not covered in BIO 1134.

July 30, 1996

Course Name: Microbiology

Course Abbreviation: BIO 2924

Classification: Related Academic

Description: A lecture/laboratory course providing a survey of the microbes (microscopic organisms) with emphasis and detailed study being placed on those affecting other forms of life, especially man. Laboratory is devoted to basic techniques of microbial study, such as identification, control, morphology, physiology, life cycles, and culture techniques.

Course Name: General Chemistry I

Course Abbreviation: CHE 1213

Classification: Related Academic

Description: Atomic and molecular structure, periodicity and atomic properties, stoichiometry, the male concept, types of solutions, energy-enthalpy.

Corequisites: General Chemistry Laboratory I (CHE 1211) must be scheduled concurrently.

July 30, 1996

Course Name: General Chemistry Laboratory I

Course Abbreviation: CHE 1211

Classification: Related Academic

Description: Must be taken concurrently in phase with the lecture sequence. Selected experiments to illustrate the principles taught in lecture.

Corequisites: General Chemistry I (CHE 1213) must be scheduled concurrently.

Course Name: General Chemistry II

Course Abbreviation: CHE 1223

Classification: Related Academic

Description: Gases, kinetics, equilibria, thermodynamics, electrochemistry, nuclear chemistry, coordination and compounds.

Pre/corequisites: General Chemistry I (CHE 1213) and General Chemistry Laboratory I (CHE 1211); General Chemistry Laboratory II (CHE 1221) must be scheduled concurrently.

July 30, 1996

Course Name: General Chemistry Laboratory II

Course Abbreviation: CHE 1221

Classification: Related Academic

Description: A continuation of General Chemistry Laboratory I (CHE 1211). Must be taken concurrently in phase with the lecture sequence.

Prerequisites: General Chemistry I (CHE 1213) and General Chemistry Laboratory I (CHE 1211); General Chemistry II (CHE 1223) must be scheduled concurrently.

Course Name: Principles of Chemistry I

Course Abbreviation: CHE 1314

Classification: Related Academic

Description: Emphasis on properties of matter and application of principles. Primarily for students in pre-nursing, home economics, agriculture and physical education.

July 30, 1996

Course Name: Principles of Chemistry II

Course Abbreviation: CHE 1324

Classification: Related Academic

Description: A continuation of Principles of Chemistry I (CHE 1314). Emphasis on systematic semimicro analysis of cations and anions.

Prerequisites: Principles of Chemistry I (CHE 1314)

Course Name: General Psychology I

Course Abbreviation: PSY 1513

Classification: Related Academic

Description: An introduction to the scientific study of human behavior. Includes history and methods of psychology; growth and development; principles of learning; sensation and perception; thinking; statistics; personality; and intelligence.

Course Name: Nutrition

Course Abbreviation: HEC 1253

Classification: Related Academic

Description: This course is a study of nutrients required for normal growth and applied to the selection of food for ingestion, metabolic process of digestion, assimilation and absorption.

Course Name: College Algebra

Course Abbreviation: MAT 1313

Classification: Related Academic

Description: This course includes equations, inequalities, functions and graphs, circles, polynomial and rational functions, and systems of equations and inequalities.

Prerequisites: At least two units of high school algebra or MAT 1233.

Course Name: Survey of Physics I

Course Abbreviation: PHY 1214

Classification: Related Academic

Description: Lectures and demonstrations covering classical and modern physics.

Course Name: Trigonometry

Course Abbreviation: MAT 1323

Classification: Related Academic

Description: Trigonometric functions; functions of the composite angle; fundamental relations; trigonometric equations; logarithms; radian measure; solution of right and oblique triangles; inverse trigonometric functions; and vectors.

Prerequisites: MAT 1313 or equivalent

July 30, 1996

Course Name: Introduction to Computer Concepts

Course Abbreviation: CSC 1113

Classification: Related Academic

Description: A basic course that advances concepts, terminology, and theory of modern computers. It is a survey course. It is not for business, computer science or engineering students.

Course Name: Music Appreciation (Non-Majors)

Course Abbreviation: MUS 1113

Classification: Related Academic

Description: Listening course designed to give the student, through aural perception, understanding and appreciation of music as a moving force in Western culture.

SECTION III:

RECOMMENDED TOOLS AND EQUIPMENT

RECOMMENDED TOOLS AND EQUIPMENT FOR DENTAL ASSISTING TECHNOLOGY PROGRAMS

CAPITALIZED ITEMS

1. Air Dryer, Dequavator (1 per program)
2. Autoclave, Steam (1 per program)
3. Cabinet, Mobile (1 per operatory)
4. Central Evacuation System (1 per program)
5. Chair, Dental (1 per operatory)
6. Compressor, Air (1 per program)
7. Dental Unit (1 per operatory)
8. Handpiece, Slow Speed (1 per operatory)
9. Handpiece, Slow Speed Lab Air Driven (1 per 2 students)
10. Handpiece, High Speed (1 per operatory)
11. Light Curing Unit (1 per operatory)
12. Light Dental (1 per operatory)
13. Manikin Head, Chrome (Billy-Bob) (1 per operatory)
14. Manikin, Radiographic (Dexter) (1 per x-ray operatory)
15. Microscope (2 per program)
16. Mixer, Plaster (1 per program)
17. OSHA Compliance System (1 per program)
18. Processor, Automatic Film (1 per program)
19. Stool, Assistant's (1 per operatory)
20. Ultrasonic Cleaner (2 per program)
21. X-ray Machine, Intraoral (1 per x-ray operatory)
22. X-ray Machine, Panoramic (1 per program)
23. Computer w/CD ROM (1 per 4 students)
24. Printer, Laser (1 per 2 computers)

NON-CAPITALIZED ITEMS

1. Amalgram Instruments (12 per operatory)
2. Cement Spatulas (2 per student)
3. Composite Instruments (each) (12 per operatory)
4. Impression Trays, metal rim, assorted sizes (1 pr. per size per operatory)
5. Knife, Lab (1 per student)
6. Rubber Dam, Rubber Dam Instrumentation (1 per operatory & 1 per student)
7. Safe Light GBX (1 per program)
8. Sharp's Containers (1 per operatory, 1 per classroom, & 1 per lab)
9. Slabs, Glass Mixing (1 per student & 1 per operatory)
10. Spatula, Alginate (1 per student & 1 per operatory)

11. Spatulas, Plaster (1 per student & 1 per operatory)
12. Sphygmomanometer (1-2 per student & 1 per operatory)
13. Splash Hood with Light Socket/Lucite Shield (2 per lathe)
14. Stethoscope (1-2 per student & 1 per operatory)
15. Syringe, Aspirating (2 per operatory)
16. Thermometer, Digital (1 per operatory)
17. Amalgamator (1 per 3 students)
18. Apron, Lead (1 per operatory)
19. Apron, Lead, Thyroid Collar (1 per operatory)
20. Biological Monitoring System (1 per program)
21. Chair, Operator (1 per operatory)
22. Dentiform, Assorted (2 per student)
23. Developer, Chairside Instant (1 per program)
24. Duplicator, Film (1 per program)
25. Human Skull Model (1 per 3 students)
26. Instrument Cabinets, Dental (1 per program)
27. Lathe (1 per 3 students)
28. Processing Tanks (1 per program)
29. Pulp Vitalometer (1 per operatory)
30. Trimmer, Model (1 per sink)
31. Sterilizer, Glass Bead (1 per program)
32. Vacuum Adapter (1 per program)
33. Vibrator, Mixing (1 per 3 students)
34. View Boxes, Film (1 per student)
35. Surge Protector (1 per 2 computers)

INSTRUCTIONAL AIDS AND RESOURCES

1. Articulator, Full Mouth (1 per program)
2. Emergency Medical Kit (1 per program)
3. Mercury Spill Absorbent Kit (1 per program)
4. Stethoscope, Teaching (1 per program)

SUGGESTED REFERENCES

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VIDEOS/SOFTWARE

Videos: (1 each)

1. Four Handed Dentistry
2. Mixing Cements
3. Exposing, Processing, & Mounting Radiographs
4. Transferring Instruments
5. Mixing Impression Materials
6. Trimming Models
7. Root Canal Procedure
8. Rubber Dam Application
9. Assisting with Fixed Prosthodontia
10. Assisting with Amalgam Procedure
11. Assisting with Composite Restorations
12. Assisting with Sealants
13. Charting
14. Seating the Patient
15. Fluoride Treatment
16. Coronal Polishing
17. Oral Surgery Procedures

18. Aseptic Techniques
19. Assisting in Orthodontics
20. Assisting in Pedodontics
21. Exposure to Implant Assisting
22. OSHA Training & Guidelines
23. Assisting w/Removable Prosthodontia

Slide Set: (1 each)
1. Oral Pathology

Software:
1. Easy Dental Plus (1 per computer)
2. Windows 3.1 or higher (1 per computer)
3. Body Works 4.0 (1 per computer)

APPENDIX A:

RELATED ACADEMIC TOPICS

APPENDIX A

RELATED ACADEMIC TOPICS FOR COMMUNICATIONS

C1 Interpret written material.
C2 Interpret visual materials (maps, charts, graphs, tables, etc.).
C3 Listen, comprehend, and take appropriate actions.
C4 Access, organize, and evaluate information.
C5 Use written and/or oral language skills to work cooperatively to solve problems, make decisions, take actions, and reach agreement.
C6 Communicate ideas and information effectively using various oral and written forms for a variety of audiences and purposes.

EXPANDED TOPICS FOR COMMUNICATIONS

TOPIC C1: Interpret written material.

C1.01 Read and follow complex written directions.
C1.02 Recognize common words and meanings associated with a variety of occupations.
C1.03 Adjust reading strategy to purpose and type of reading.
C1.04 Use sections of books and reference sources to obtain information.
C1.05 Compare information from multiple sources and check validity.
C1.06 Interpret items and abbreviations used in multiple forms.
C1.07 Interpret short notes, memos, and letters.
C1.08 Comprehend technical words and concepts.
C1.09 Use various reading techniques depending on purpose for reading.
C1.10 Find, read, understand, and use information from printed matter or electronic sources.

TOPIC C2: Interpret visual materials (maps, charts, graphs, tables, etc.).

C2.01 Use visuals in written and in oral presentations.
C2.02 Recognize visual cues to meaning (layout, typography, etc.).
C2.03 Interpret and apply information using visual materials.

TOPIC C3: Listen, comprehend, and take appropriate action.

C3.01 Identify and evaluate orally-presented messages according to purpose.
C3.02 Recognize barriers to effective listening.
C3.03 Recognize how voice inflection changes meaning.
C3.04 Identify speaker signals requiring a response and respond accordingly.
C3.05 Listen attentively and take accurate notes.
C3.06 Use telephone to receive information.

C3.07 Analyze and distinguish information from formal and informal oral presentations.

TOPIC C4: Access, organize, and evaluate information.

C4.01 Distinguish fact from opinion.
C4.02 Use various print and non-print sources for specialized information.
C4.03 Interpret and distinguish between literal and figurative meaning.
C4.04 Interpret written or oral communication in relation to context and writer's point of view.
C4.05 Use relevant sources to gather information for written or oral communication.

TOPIC C5: Use written and/or oral language skills to work cooperatively to solve problems, make decisions, take actions, and reach agreement.

C5.01 Select appropriate words for communication needs.
C5.02 Use reading, writing, listening, and speaking skills to solve problems.
C5.03 Compose inquiries and requests.
C5.04 Write persuasive letters and memos.
C5.05 Edit written reports, letters, memos, and short notes for clarity, correct grammar, and effective sentences.
C5.06 Write logical and understandable statements, phrases, or sentences for filling out forms, for correspondence or reports.
C5.07 Write directions or summaries of processes, mechanisms, events, or concepts.
C5.08 Select and use appropriate formats for presenting reports.
C5.09 Convey information to audiences in writing.
C5.10 Compose technical reports and correspondence that meet accepted standards for written communications.

TOPIC C6: Communicate ideas and information using oral and written forms for a variety of audiences and purposes.

C6.01 Give complex oral instructions.
C6.02 Describe a business or industrial process/mechanism.
C6.03 Participate effectively in group discussions and decision making.
C6.04 Produce effective oral messages utilizing different media.
C6.05 Explore ideas orally with partners.
C6.06 Participate in conversations by volunteering information when appropriate and asking relevant questions when appropriate.
C6.07 Restate or paraphrase a conversation to confirm one's own understanding.
C6.08 Gather and provide information utilizing different media.

C6.09 Prepare and deliver persuasive, descriptive, and demonstrative oral presentations.

RELATED ACADEMIC TOPICS FOR MATHEMATICS

M1 Relate number relationships, number systems, and number theory.
M2 Explore patterns and functions.
M3 Explore algebraic concepts and processes.
M4 Explore the concepts of measurement.
M5 Explore the geometry of one-, two-, and three-dimensions.
M6 Explore concepts of statistics and probability in real world situations.
M7 Apply mathematical methods, concepts, and properties to solve a variety of real-world problems.

EXPANDED TOPICS FOR MATHEMATICS

TOPIC M1: Relate number relationships, number systems, and number theory.

M1.01 Understand, represent, and use numbers in a variety of equivalent forms (integer, fraction, decimal, percent, exponential, and scientific notation) in real world and mathematical problem situations.
M1.02 Develop number sense for whole numbers, fractions, decimals, integers, and rational numbers.
M1.03 Understand and apply ratios, proportions, and percents in a wide variety of situations.
M1.04 Investigate relationships among fractions, decimals, and percents.
M1.05 Compute with whole numbers, fractions, decimals, integers, and rational numbers.
M1.06 Develop, analyze, and explain procedures for computation and techniques for estimations.
M1.07 Select and use an appropriate method for computing from among mental arithmetic, paper-and-pencil, calculator, and computer methods.
M1.08 Use computation, estimation, and proportions to solve problems.
M1.09 Use estimation to check the reasonableness of results.

TOPIC M2: Explore patterns and functions.

M2.01 Describe, extend, analyze, and create a wide variety of patterns.
M2.02 Describe and represent relationships with tables, graphs, and rules.
M2.03 Analyze functional relationships to explain how a change in one quantity results in a change in another.
M2.04 Use patterns and functions to represent and solve problems.
M2.05 Explore problems and describe results using graphical, numerical, physical, algebraic, and verbal mathematical models or representations.

M2.06 Use a mathematical idea to further their understanding of other mathematical ideas.

M2.07 Apply mathematical thinking and modeling to solve problems that arise in other disciplines, such as art, music, and business.

TOPIC M3: Explore algebraic concepts and processes.

M3.01 Represent situations and explore the interrelationships of number patterns with tables, graphs, verbal rules, and equations.

M3.02 Analyze tables and graphs to identify properties and relationships and to interpret expressions and equations.

M3.03 Apply algebraic methods to solve a variety of real world and mathematical problems.

TOPIC M4: Explore the concepts of measurement.

M4.01 Estimate, make, and use measurements to describe and compare phenomena.

M4.02 Select appropriate units and tools to measure to the degree of accuracy required in a particular situation.

M4.03 Extend understanding of the concepts of perimeter, area, volume, angle measure, capacity, and weight and mass.

M4.04 Understand and apply reasoning processes, with special attention to spatial reasoning and reasoning with proportions and graphs.

TOPIC M5: Explore the geometry of one-, two-, and three-dimensions.

M5.01 Identify, describe, compare, and classify geometric figures.

M5.02 Visualize and represent geometric figures with special attention to developing spatial sense.

M5.03 Explore transformations of geometric figures.

M5.04 Understand and apply geometric properties and relationships.

M5.05 Classify figures in terms of congruence and similarity and apply these relationships.

TOPIC M6: Explore the concepts of statistics and probability in real world situations.

M6.01 Systematically collect, organize, and describe data.

M6.02 Construct, read, and interpret tables, charts, and graphs.

M6.03 Develop an appreciation for statistical methods as powerful means for decision making.

M6.04 Make predictions that are based on exponential or theoretical probabilities.

M6.05 Develop an appreciation for the pervasive use of probability in the real world.

TOPIC M7: Apply mathematical methods, concepts, and properties to solve a variety of real-world problems.

M7.01 Use computers and/or calculators to process information for all mathematical situations.
M7.02 Use problem-solving approaches to investigate and understand mathematical content.
M7.03 Formulate problems from situations within and outside mathematics.
M7.04 Generalize solutions and strategies to new problem situations.

RELATED ACADEMIC TOPICS FOR SCIENCE

S1 Explain the Anatomy and Physiology of the human body.
S2 Apply the basic biological principles of Plants, Viruses and Monerans, Algae, Protista, and Fungi.
S3 Relate the nine major phyla of the kingdom animalia according to morphology, anatomy, and physiology.
S4 Explore the chemical and physical properties of the earth to include Geology, Meteorology, Oceanography, and the Hydrologic Cycle.
S5 Investigate the properties and reactions of matter to include symbols, formulas and nomenclature, chemical equations, gas laws, chemical bonding, acid-base reactions, equilibrium, oxidation-reduction, nuclear chemistry, and organic chemistry.
S6 Explore the principles and theories related to motion, mechanics, electricity, magnetism, light energy, thermal energy, wave energy, and nuclear physics.
S7 Explore the principles of genetic and molecular Biology to include the relationship between traits and patterns of inheritance, population genetics, the structure and function of DNA, and current applications of DNA technology.
S8 Apply concepts related to the scientific process and method to include safety procedures for classroom and laboratory; use and care of scientific equipment; interrelationships between science, technology and society; and effective communication of scientific results in oral, written, and graphic form.

EXPANDED TOPICS FOR SCIENCE

TOPIC S1: Explain the Anatomy and Physiology of the human body.

S1.01 Recognize common terminology and meanings.
S1.02 Explore the relationship of the cell to more complex systems within the body.

S1.03 Summarize the functional anatomy of all the major body systems.
S1.04 Relate the physiology of the major body systems to its corresponding anatomy.
S1.05 Compare and contrast disease transmission and treatment within each organ system.
S1.06 Explore the usage of medical technology as related to human organs and organ systems.
S1.07 Explain the chemical composition of body tissue.

TOPIC S2: Apply the basic biological principles of Plants, Viruses and Monerans, Algae, Protista, and Fungi.

S2.01 Identify the major types and structures of plants, viruses, monera, algae protista, and fungi.
S2.02 Explain sexual and asexual reproduction.
S2.03 Describe the ecological importance of plants as related to the environment.
S2.04 Analyze the physical chemical and behavioral process of a plant.

TOPIC S3: Relate the nine major phyla of the kingdom animalia according to morphology, anatomy, and physiology.

S3.01 Explain the morphology, anatomy, and physiology of animals.
S3.02 Describe the characteristics, behaviors, and habitats of selected animals.

TOPIC S4: Explore the chemical and physical properties of the earth to include Geology, Meteorology, Oceanography, and the Hydrologic Cycle.

S4.01 Examine minerals and their identification, products of the rock cycle, byproducts of weathering, and the effects of erosion.
S4.02 Relate the Hydrologic Cycle to include groundwater its zones, movement, and composition; surface water systems, deposits, and runoff.
S4.03 Consider the effects of weather and climate on the environment.
S4.04 Examine the composition of seawater; wave, tides, and currents; organisms, environment, and production of food; energy, food and mineral resources of the oceans.

TOPIC S5: Investigate the properties and reactions of matter to include symbols, formulas and nomenclature, chemical equations, gas laws, chemical bonding, acid-base reactions, equilibrium, oxidation-reduction, nuclear chemistry, and organic chemistry.

S5.01 Examine the science of chemistry to include the nature of matter, symbols, formulas and nomenclature, and chemical equations.

S5.02 Identify chemical reactions including precipitation, acids-bases, and reduction-oxidation.
S5.03 Explore the fundamentals of chemical bonding and principles of equilibrium.
S5.04 Relate the behavior of gases.
S5.05 Investigate the structure, reactions, and uses of organic compounds; and investigate nuclear chemistry and radiochemistry.

TOPIC S6: Explore the principles and theories related to motion, mechanics, electricity, magnetism, light energy, thermal energy, wave energy, and nuclear physics.

S6.01 Examine fundamentals of motion of physical bodies and physical dynamics.
S6.02 Explore the concepts and relationships among work, power, and energy.
S6.03 Explore principles, characteristics, and properties of electricity, magnetism, light energy, thermal energy, and wave energy.
S6.04 Identify principles of modern physics related to nuclear physics.

TOPIC S7: Explore the principles of genetic and molecular Biology to include the relationship between traits and patterns of inheritance; population genetics, the structure and function of DNA, and current applications of DNA technology.

S7.01 Examine principles, techniques, and patterns of traits and inheritance in organisms.
S7.02 Apply the concept of population genetics to both microbial and multicellular organism.
S7.03 Identify the structure and function of DNA and the uses of DNA technology in science, industry, and society.

TOPIC S8: Apply concepts related to the scientific process and method to include safety procedures for classroom and laboratory; use and care of scientific equipment; interrelationships between science, technology and society; and effective communication of scientific results in oral, written, and graphic form.

S8.01 Apply the components of scientific processes and methods in classroom and laboratory investigations.
S8.02 Observe and practice safe procedures in the classroom and laboratory.
S8.03 Demonstrate proper use and care for scientific equipment.
S8.04 Investigate science careers, and advances in technology.
S8.05 Communicate results of scientific investigations in oral, written, and graphic form.

APPENDIX B:

WORKPLACE SKILLS

APPENDIX B
WORKPLACE SKILLS FOR THE 21ST CENTURY

WP1 Allocates resources (time, money, materials and facilities, and human resources).

WP2 Acquires, evaluates, organizes and maintains, and interprets/communicates information, including the use of computers.

WP3 Practices interpersonal skills related to careers including team member participation, teaching other people, serving clients/customers, exercising leadership, negotiation, and working with culturally diverse.

WP4 Applies systems concept including basic understanding, monitoring and correction system performance, and designing and improving systems.

WP5 Selects, applies, and maintains/troubleshoots technology.

WP6 Employs thinking skills including creative thinking, decision making, problem solving, reasoning, and knowing how to learn.

APPENDIX C:

STUDENT COMPETENCY PROFILE

STUDENT COMPETENCY PROFILE

Student: _____

This record is intended to serve as a method of noting student achievement of the competencies in each course. It can be duplicated for each student and serve as a cumulative record of competencies achieved in the program.

In the blank before each competency, place the date on which the student mastered the competency.

Dental Orientation (DAT 1111)

_____ 1. Discuss the development, function, status, and organization of the dental profession.
_____ 2. Discuss the educational requirements of the members of the dental profession.
_____ 3. Explain the professional, legal, and ethical responsibilities of the dental assistant.
_____ 4. Recognize and discuss word components, terms, and abbreviations related to the dental profession.
_____ 5. Identify various employment opportunities in the field of dental assisting.

Dental Assisting Materials (DAT 1214)

_____ 1. Relate safety requirements for handling dental materials and equipment.
_____ 2. Identify various dental materials.
_____ 3. Describe characteristics of gypsum products.
_____ 4. Describe the uses and properties of preventive dental materials.
_____ 5. Explain characteristics of dental cements and liners.
_____ 6. Discuss the uses and properties of dental waxes.
_____ 7. Discuss the uses and properties of plastics in dentistry.
_____ 8. Describe the uses and properties of precious and non-precious metals.
_____ 9. Discuss the properties of amalgam.
_____ 10. Describe the uses and properties of impression materials.
_____ 11. Demonstrate manipulation of gypsum products.
_____ 12. Demonstrate manipulation of dental cements and liners.
_____ 13. Demonstrate manipulation of various dental waxes.
_____ 14. Demonstrate manipulation of dental plastics.
_____ 15. Demonstrate manipulation of dental amalgam.
_____ 16. Demonstrate manipulation of impression materials.

Dental Science I (DAT 1313)

_____ 1. Describe primary and permanent dentition.
_____ 2. Illustrate the anatomy of a tooth.
_____ 3. Describe the anatomy and physiology of the head and neck.
_____ 4. Describe the relationships of body systems to the dental patient.

Chairside Assisting I (DAT 1415)

_____ 1. Describe and demonstrate infection control procedures in a preclinic setting.
_____ 2. Assess and record patient data.
_____ 3. Describe the role of the assistant in chairside emergencies.
_____ 4. Describe the equipment in a dental office.
_____ 5. Demonstrate the use of selected equipment found in a dental office.
_____ 6. Explain the role of the assistant in four-handed dentistry.
_____ 7. Demonstrate the use of hand instruments.
_____ 8. Demonstrate the use of rotary instruments.
_____ 9. Explain and implement charting techniques.
_____ 10. Describe and demonstrate the procedure for local anesthesia.
_____ 11. Describe the amalgam procedure.
_____ 12. Describe the composite procedure.
_____ 13. Describe and simulate the procedure for a temporary restoration.
_____ 14. Describe chairside procedures for fixed prosthodontics.
_____ 15. Identify selected instruments used in an endodontic procedure.
_____ 16. Identify selected instruments in oral surgery procedures.

Dental Radiology I (DAT 1513)

_____ 1. Describe the development of dental x-ray technology.
_____ 2. Describe safety factors in relation to radiation biology.
_____ 3. Explain the properties of dental x-ray radiation.
_____ 4. Discuss auxiliary techniques in patient management for exposing radiographs.
_____ 5. Differentiate various types of x-ray films.
_____ 6. Explain and demonstrate the processing of dental film.
_____ 7. Identify normal anatomical landmarks used for mounting radiographs.
_____ 8. Describe the techniques used in exposing intraoral radiographs.
_____ 9. Describe the techniques used in exposing extraoral radiographs.

Practice Management (DAT 1714)

_____ 1. Describe duties of the dental office personnel.

_____ 2. Discuss telephone etiquette.
_____ 3. Describe various record keeping procedures.
_____ 4. Explain and prepare a dental insurance form.
_____ 5. Describe bookkeeping procedures in a dental office.
_____ 6. Discuss general office procedures.
_____ 7. Utilize dental-related computer software.
_____ 8. Describe employability skills.
_____ 9. Discuss interpersonal skills needed in the dental practice.

Dental Science II (DAT 1323)

_____ 1. Discuss embryology as related to dentistry.
_____ 2. Discuss pharmacology as related to dentistry.
_____ 3. Discuss microbiology as related to dentistry.
_____ 4. Discuss oral pathology as related to dentistry.

Clinical Experience I (DAT 1815)

_____ 1. Correlate skills from areas with knowledge obtained from didactic and preclinical experiences.

Dental Radiology II (DAT 1522)

_____ 1. Correlate skills from areas with knowledge obtained from didactic and preclinical experience.

Chairside Assisting II (DAT 1423)

_____ 1. Describe oral surgery procedures.
_____ 2. Describe peridontal procedures.
_____ 3. Describe endodontic procedures.

Dental Health Education (DAT 1612)

_____ 1. Discuss preventive dental procedures.
_____ 2. Discuss the role of nutrition in dental health.

Clinical Experience II (DAT 1822)

_____ 1. Correlate skills from areas with knowledge obtained from didactic and preclinical experiences.

Chairside Assisting III (DAT 1433)

_____ 1. Describe and demonstrate the procedure for fixed prosthodontics.
_____ 2. Describe and demonstrate procedures for removable prosthodontics.
_____ 3. Describe and demonstrate procedures for pedodontics.
_____ 4. Describe and demonstrate procedures for orthodontics.